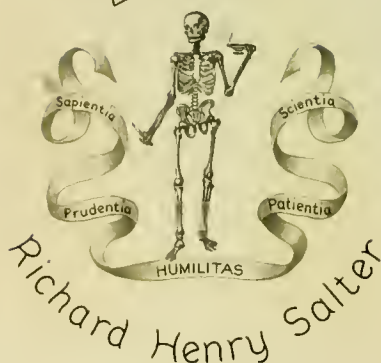


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THE chief object of this work is to call the attention not only of medical men, but of all persons who may be interested in the matter, to the investigation of the mode of treatment which may be most appropriate in the more serious diseases of children. The treatment generally adopted in most of those diseases, when they are severe, and more especially in such of them as affect the organs of respiration, is founded on the opinion that they either proceed from, or resolve themselves into, inflammation; and that this so-called inflammation, if not promptly checked by bleeding and the administration of active antiphlogistic medicines, speedily causes death.

Now, without entering here into any pathological discussion respecting the symptoms and con-

sequences of inflammation, but supposing that it exists, or is to be apprehended, in the diseases referred to, it may yet be confidently affirmed, on evidence furnished by the Reports of the Registrar-General, that the mode of treatment above mentioned is improper. If, in answer to this, it be asserted that the great mortality of children, as shown in those Reports, is the result of a law of nature, which declares that, out of a given number born, *so very many* must die in early childhood, the question then is, of what use is "the Doctor?" Does he assist nature in carrying out the law, or has he any power to suspend it? Is he called in to remedy "medicable ills," or to lull with delusive hope the anxiety of the parents, till death steps in and reveals the distressing truth? This so-called law of nature, however, will, on examination, be found to be nothing more than an *ex-post-facto* gloss, interpolated by a commentator, who has erroneously inferred the operation of a general principle from a partial result. The "law" has many exceptions,—*valet nec ubique nec semper*.—it varies according to times, and seasons, and localities, and circumstances; and many of those, whom nature is supposed to doom to an early death, may be saved by a right interpretation of her authentic laws relating to health and disease.

But to come to facts, as recorded in figures, by the Registrar-General of Births, Deaths, and Mar-

riages, in his Report for 1841. Here the very great mortality in children is ascertained by the simple process of counting, which leaves no room for doubt, and supersedes the necessity for estimating or guessing: "Men guess before they learn to count," says Dr. Johnson, "and they usually guess wrong." Between the 1st of July, 1840, and the 30th of June, 1841, the number of Births registered in England and Wales were, males, 257,129; Females, 244,460; total, 501,589. In the same year the deaths, of all ages, were, males, 177,926; females, 172,175; total, 350,101. Of this number, 76,328 were children, of both sexes, under one year; and 65,419 children between one and five years old, making together 141,747, which is at the rate of rather more than forty out of every hundred deaths. The comparative mortality at different periods from birth till the age of five will appear from the following statement.

## DEATHS.

| Age.               |        | Males.        |     | Females.      |     | Total.        |
|--------------------|--------|---------------|-----|---------------|-----|---------------|
| Under 1 month      | ...    | 13,274        | ... | 9,603         | ... | 22,877        |
| 1 Month and under  | 2 ..   | 4,782         | ... | 3,803         | ... | 8,585         |
| 2 Months and under | 3 ...  | 3,521         | ... | 2,782         | ... | 6,303         |
| 3 Months and under | 6 ...  | 8,344         | ... | 6,612         | ... | 14,956        |
| 6 Months and under | 9 ...  | 6,717         | ... | 5,350         | ... | 12,067        |
| 9 Months and under | 12 ... | 6,162         | ... | 5,378         | ... | 11,540        |
| Total under 1 year | ...    | <u>42,800</u> | ... | <u>33,528</u> | ... | <u>76,328</u> |

| Age.                      | Males.     | Females.   | Total. |
|---------------------------|------------|------------|--------|
| 1 Year and under 2 ...    | 15,304 ... | 14,538 ... | 29,842 |
| 2 Years and under 3 ...   | 8,125 ...  | 7,827 ...  | 15,952 |
| 3 Years and under 4 ...   | 5,666 ...  | 5,737 ...  | 11,403 |
| 4 Years and under 5 ...   | 4,129 ...  | 4,093 ...  | 8,222  |
| <hr/>                     |            |            |        |
| Total between 1 and 5 ... | 33,224 ... | 32,195 ... | 65,419 |
| <hr/>                     |            |            |        |

The much greater mortality of males than females under a month old, as shown in the above tables, is remarkable. After the first year, the deaths of males and females become more proportionate to the relative number of each sex. Between the 15th and 25th years, the mortality is greater in females, as will be seen in the following table, which is here given for the purpose of calling the attention of medical men to this fact.

| Age.                       | Males.     | Females.   | Total. |
|----------------------------|------------|------------|--------|
| 5 Years and under 10 ...   | 9,363 ...  | 9,096 ...  | 18,459 |
| 10 Years and under 15 ...  | 4,556 ...  | 4,913 ..   | 9,469  |
| 15 Years and under 20 ...  | 5,717 ...  | 6,628 ...  | 12,345 |
| 20 Years and under 25 ...  | 6,666 ...  | 7,283 ...  | 13,949 |
| <hr/>                      |            |            |        |
| Total between 5 and 25 ... | 26,302 ... | 27,920 ... | 54,222 |
| <hr/>                      |            |            |        |

The following table, transcribed from an abstract of the causes of death registered in 1839, will serve to show the mortality in some of the diseases most fatal to children.

| Diseases.        | Males.         | Females.       | Total. |
|------------------|----------------|----------------|--------|
| Small-pox . . .  | 4,824 . . . .  | 4,307 . . . .  | 9,131  |
| Measles . . . .  | 5,536 . . . .  | 5,401 . . . .  | 10,937 |
| Scarlatina . .   | 5,095 . . . .  | 5,230 . . . .  | 10,325 |
| Hooping-cough    | 3,683 . . . .  | 4,482 . . . .  | 8,165  |
| Croup . . . . .  | 2,223 . . . .  | 1,969 . . . .  | 4,192  |
| Hydrocephalus    | 4,313 . . . .  | 3,436 . . . .  | 7,749  |
| Convulsions . .  | 14,245 . . . . | 11,163 . . . . | 25,408 |
| Pneumonia . .    | 10,000 . . . . | 8,151 . . . .  | 18,151 |
| Teething . . . . | 2,614 . . . .  | 2,402* . . . . | 5,016  |

In the Appendix to the Report of 1841, it is observed that the ‘ diseases incidental to childhood are twice as fatal in the town districts as they are in the country,’ and in illustration of this the following comparative table is given.

| Disease.                                                          | Deaths in 1,000,000 persons living in the |        |
|-------------------------------------------------------------------|-------------------------------------------|--------|
|                                                                   | Country.                                  | Towns. |
| Hydrocephalus, Cephalitis . .                                     | 419 . . . . .                             | 1,071  |
| Convulsions, Teething . . . .                                     | 942 . . . . .                             | 2,586  |
| Pneumonia . . . . .                                               | 905 . . . . .                             | 2,028  |
| Small-pox, Measles, Scarlatina, }<br>Hooping-cough, Croup . . . } | 1,999 . . . . .                           | 4,014  |

In a paper on the Pressure and Progress of the Causes of Mortality, by Mr. E. Chadwick, printed in the Journal of the Statistical Society, vol. vii., 1844, the following proportion of deaths in each class, is given from the District Returns of the Metropolis, 1839.

|             | Adults.   | Under 10. | Ratio of Deaths of Children<br>to Total Deaths. |                        |
|-------------|-----------|-----------|-------------------------------------------------|------------------------|
| Gentlemen   | 1,724 ..  | 529 ..    | ..                                              | 1 in $4\frac{3}{10}$   |
| Tradesmen   | 3,979 ..  | 3,703 ..  | ..                                              | 1 in $2\frac{1}{10}$   |
| Labourers   | 12,045 .. | 13,885 .. | ..                                              | 1 in $1\frac{1}{10}$   |
| Paupers     | 3,062 ..  | 593 ..    | ..                                              | 1 in $6\frac{2}{10}$ * |
| Undescribed | 2,996 ..  | 2,761 ..  | ..                                              | 1 in $2\frac{1}{10}$   |

With reference to the different ratio of the deaths of children to those of adults perceived in the different classes, Mr. Chadwick observes: "It has been shown in the Sanatory Report that in the same districts where one-fourth of the children of the gentry died, more than one-half of the children of the working classes have died; and this excess of deaths among the poorer classes was traced to preventible causes."

From the following table, it appears that the difference of temperature, in the different seasons, has considerable influence in some diseases; and that in others it has had but little effect. Of diseases of the epidemic class, it has been observed that influenza and hooping-cough followed the same law as the pulmonary: cholera, dysentery,

\* It must not be inferred from this item that the mortality of children of "paupers" is less than that of the children of the other classes. The naked fact, as it stands here, may be taken as evidence that in the class of paupers there is not so large a proportion of young children as in the others. Comparatively few children are born of parents in a state of legal pauperism. Women are not prolific in union workhouses.—P. H.

diarrhœa, and thrush, the same as the abdominal affections.

| Causes of death.  | Winter.  | Spring.  | Summer.  | Autumn. |
|-------------------|----------|----------|----------|---------|
| Hooping-cough ... | 1674 ... | 1208 ... | 644 ...  | 787     |
| Thrush ...        | 156 ...  | 166 ...  | 339 ...  | 145     |
| Pneumonia ...     | 3326 ... | 2454 ... | 1827 ... | 3600    |
| Hydrocephalus ... | 1370 ... | 1330 ... | 1348 ... | 1231    |
| Convulsions ...   | 2414 ... | 2298 ... | 2532 ... | 2119    |
| Consumption ...   | 5600 ... | 5778 ... | 5501 ... | 5748    |
| Scrofula ...      | 72 ...   | 64 ...   | 72 ...   | 54      |
| Cancer ...        | 276 ...  | 230 ...  | 264 ...  | 262     |

The preceding statistic details,—which scarcely differ in their proportionate results from those furnished by subsequent reports,—afford not only precise information respecting the great mortality of children, but also display its comparative amount in the diseases to which they are more peculiarly liable. From one of the tables we learn that the mortality occasioned by many of those diseases is twice as great in the town as it is in the country districts; and from another, furnished by the District Returns of the Metropolis, we learn that the mortality of children is proportionably greater in the class of labourers than in the class of tradesmen; and greater in the latter than in the class of gentlemen. It is thus evident, from the excess of deaths in the children of the poorer classes, that the diseases which are most fatal to children generally, have not in themselves,—that is, when considered, nosologically, as something distinct

from the living subjects, the patients, in which they subsist—a character essentially mortal; but that their life-destroying energy is owing, in a considerable degree, to circumstances over which man has control.

Among the principal “preventible causes,” either inducing disease, or lending power to its malignity, are, impure air, unwholesome or insufficient food, want of proper clothing, too great fatigue, or too little exercise. Any of these, by disturbing the functions of respiration, or of nutrition, either directly or indirectly, may occasion debility in the system, and thus render it less able to resist or sustain the attacks of specific disease. The remedy in those circumstances, before specific disease has manifested itself, is obvious; and may be safely applied by any one who possesses the means, without the necessity of consulting a physician.

The great irritation which usually accompanies teething, and the derangement of the stomach which frequently results from the change of diet at the time of weaning, may be regarded as the two grand internal agents or promoters of disease in infants. When specific disease manifests itself during the prevalence of either of those states, and more especially when they are combined, as is frequently the case, all the symptoms are aggravated. From certain peculiarities in the structure and constitution of young children, such as the



small size of the chest, the imperfect development of the lungs, and the rapidity of the circulation, the organs of respiration appear to be extremely liable to derangement of function, either in consequence of derangement in other vital functions quickening the circulation, or from external causes directly affecting them, such as cold, or damp air, noxious exhalations, &c. When those organs appear much oppressed, when the breathing is hurried and the pulse rapid, it is but too frequently concluded that either inflammation already exists, or that it will speedily set in. Antiquated authority prescribes what is to be done in these cases: a vigorous attack is to be made upon the phantom inflammation, as if it were something real, and independent of the living being in which it subsists; bleeding, leeching, and active lowering medicines are directed against the disease, and whether they hit or not, the already enfeebled patient is sure to feel their effects: "*S'ils n'emportent pas le mal, ils emportent au moins le malade,*" as Dr. James Gregory, in a letter subsequently quoted, observes of the "*abominable remedies*" sometimes administered in the hooping-cough.

The mode of treatment developed in the following pages is founded on the principle that the diseases of children, and of adults also, proceed from irritation, considered in a general sense, as distinct from inflammation, and indicating an opposite

course of treatment. Having so frequently witnessed the beneficial effects of this mode of treatment, not only in the diseases of children expressly mentioned in the following pages, but in others also, whether occurring in children or adults, I have ventured to publish the present work, with the view of calling the attention of both medical practitioners and parents more expressly to the subject. It would have been easy to have enlarged the book by the insertion of numerous cases, of persons of all ages, successfully treated on the principle advocated; but my object is to direct attention to the principle, and treatment dependent on it, and not to advertise my own practice.

In concluding this preface, however, I will briefly relate two cases of puerperal fever, which are strikingly illustrative of the different results of the two different modes of treatment as applied to the cure of the same disease. A lady, aged thirty, of healthy constitution, was seized, three days after being put to bed, with a violent pain over the abdomen, which became swelled and tense. She was feverish, thirsty, and restless. Her medical attendant, impressed with the idea of inflammation, bled her; and for a short time the violence of the symptoms appeared to abate. At the end of twelve hours, however, she became worse, and the alarming symptoms returned. Her medical attendant now called in a surgeon of great repute, who coin-

cided in the propriety of what had been done, and recommended a further abstraction of blood, and the administration of active purgatives. She was accordingly leeches and purged; and died on the third day from the first attack of the malady. The body was opened by the desire of the husband, who thought his wife had not been properly treated, and, at his request, I attended the examination. The external appearances were extreme pallor of the face, and blueness about the mouth; the body looked bloodless, and like that of a person who had died of cholera. Upon opening the abdomen and puncturing the intestines, large quantities of gas escaped: the intestines, which were enormously distended, appeared pale and bloodless. The uterus was uncontracted, and contained a small quantity of dark-coloured grumous blood.

A lady, aged thirty-four, remarkable for her excellent health, and her quick recovery after childbirth, was seized, on the evening of the third day of her confinement, in precisely the same manner as the lady whose case has just been given. I was called in next morning,—she had not previously had any medical aid,—and I found her much exhausted, restless, and in great pain. I immediately ordered hot bran to be applied to the abdomen, which was extremely painful, and as greatly distended as before she was put to bed. I gave her the following medicine.

R. Hydrarg. submuriat gr. ij.

Extract. hyoscyami gr. iij.

—— colocynth. c. gr. v.

Olei carui gutt. i.—Fiant pilulæ duæ.

To be taken directly,—and the following draught in four hours time :

R. Infusi sennæ comp. ʒix.

Tincturæ ejusdem ʒij.

Mannæ opt. ʒij.

Magnesiae sulphatis ʒij.

Tinct. zingiber. ʒj.—Fiat haustus.

This medicine operated favourably, and afforded relief.—She now took one of the following draughts every four hours.

R. Liquor. ammon. acetatis ʒiij.

Tinct. opii, m̄xv.

Spirit. myristicæ ʒj.

—— æther. nitrici ʒss.

Aq. menthæ pulegii ʒj.—Fiat haustus.

These draughts had the effect of producing sleep ; and next morning she said she felt greatly relieved. She looked much more composed, but was extremely languid. As I considered that the bowels were not sufficiently evacuated by the medicine which I had given, and as I thought it improper to repeat it in the state she was in,—more especially as the stomach appeared to be irritated,—I ordered an enema composed as follows. R. Confect. rutæ ʒiij. ; Decoct. avenæ ʒxvj.—Fiat enema.

The operation of this was favourable, and was attended with a great discharge of wind. The abatement of pain in the abdomen, and the subsidence of the swelling, were from this time distinctly marked. She continued to take the draughts for four days, and at the end of that time she no longer required medical attendance. She continued weak for a longer period than was usual with her on the occasion of her confinement, but suffered no subsequent inconvenience in consequence of the disease. The attack, I have reason to believe, originated in a disordered stomach, caused by some improper food given by the nurse.

P. H.

Lower Seymour Street,  
Portman Square,  
11th March, 1845.



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ON THE  
DISEASES OF CHILDREN.

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CHAPTER I.

INFLAMMATION.

THE theory of Inflammation, and the belief in its frequent occurrence in the diseases of infants, have taken deep root in the minds of many practitioners, and have naturally influenced the treatment which they employ for subduing many of the severe complaints to which children are subject. Thus antiphlogistic remedies, comprising blood-letting, general and local, calomel, drastic purges, &c., have been looked upon as the “sheet anchor” of successful practice. It has also been asserted that “the inflammatory affections of children are very common;” and “that children bear blood-letting better than adults.” These dogmas have extensively prevailed, and most fatal have been the results of the confidence reposed in them.

Theory, however erroneous, is harmless when confined within the boundaries of abstract science ; but as soon as it passes those limits and assumes to direct a practice, without experience, and without regard to facts and consequences, it becomes a positive evil ; and more particularly so in the practice of medicine, where the fallacy of a theory is demonstrated by the death of those on whom it is tested.

The following is the definition of inflammation given in Dr. Copland's Dictionary of Practical Medicine. " Alteration of the vital actions of a part, manifested by morbid sensibility or pain, by redness, increased temperature, and swelling, generally with more or less febrile commotion of the system."

That these symptoms of inflammation are constantly found to occur in the *adult* is certain ; and that they render the diagnosis of the disease comparatively easy, and thus impart decision in the treatment of it, there can be no question ; but there are the strongest possible grounds for doubting that a mere knowledge of these symptoms only is of much service in detecting an analogous state in the infant.

There are so many points of difference between the infant constitution and that of the adult, that the consideration of a few of them will be of great use in explanation of the views here set forth.

The muscular organisation of infants is extremely

feeble, and imperfectly developed; the whole external frame of the child consisting of little else than fat and cellular substance. It is this fat which pervades the whole body, and gives the beauty of contour to a healthy child. It is undoubtedly designed by nature as a protection against the sudden vicissitudes of temperature and the accidents to which the infant state is liable. A child never attempts to save itself when falling; it has implanted in it an instinct that restrains it from exertion, which if it had not, might often be attended with dangerous consequences.

It is this plumpness in children which has led to the error, that "fulness" is a peculiarity of the infant constitution; and from this plumpness some have been so rash as to conclude that their little bodies abound with blood, and that they are better able to spare it than adults. Let us see how this stands the test of examination. It is admitted by all physiologists that the muscular portion of the frame contains the largest quantity of blood; and it is an established fact that adults who possess the greatest developement of muscle, can bear blood-letting best. It has been already observed that children are strikingly deficient in muscular developement; and it is well known that the muscular fibres in them are extremely small and lax. This being the case, whence are we to infer that there is in them a redundancy of blood, the first essential to

life? It is also well known that persons who take but little exercise, live well, and are corpulent, are very deficient in blood; that their muscles shrink; and that such persons can ill sustain the loss of blood. The nutriment which they consume goes to the formation of fat instead of blood. They are incapable of any exertion that calls for the display of muscular energy. Bleed them injudiciously, and dropsy (a marked symptom of debility) will supervene. The two states, of obesity in indolent adolescence, and of plumpness in helpless infancy, are analogous.

Children who have died from the sudden effects of presumed inflammation, and on whom blood-letting has been practised, frequently are found to display but little alteration in their appearance, excepting extreme pallor,—the body looking as if it were blanched, but the plumpness and roundness of form and feature remaining nearly the same as in life. This arises from the speedy or sudden termination of the disease. Nature has providently bestowed this excess of fat on these delicate beings; for the absorption of it, when appetite is destroyed, continues to support life, frequently to a lengthened period. Directly this fat is all absorbed, unless a change has been produced in the system of the child through the instrumentality of nature, or by other means, life becomes extinct. The fat, in

such instances, serves the purposes of fuel to the body; and the greater the demand made upon it, the speedier is the approach of death.

The texture of all the organs and fibres of the body, in the infant, is infinitely less resisting than in the adult. There is so little tone and elasticity in them, that when once children have received a shock, or suffered derangement in their nervous organisation, it is usually long before they recover their healthy state; more especially if blood have been drawn to alleviate the malady under which they were suffering.

The blood of infants is also very different from that of adults. It possesses in a very limited degree the property of coagulation; and this arises from the deficiency of fibrine in it, and from the abundance of the serum. "Rich blood" is that which contains a healthful proportion of fibrine.

The quantity of blood in infants is likewise very small in proportion to that in adults. I have never yet heard it stated what the quantity of blood is in a child of a year old. My own impression is that it is extremely small. I once had an opportunity of seeing a child which had bled to death from the application of two leeches. The bleeding had continued through the whole of the night, and when I saw the body in the morning there did not appear a particle of blood in it. It being winter time, I desired the nurse to hold it to the fire for the

purpose of warming it,—merely to satisfy the mother, who could not believe that it was dead,—when the skin of one leg immediately shrivelled up like parchment. The quantity of blood that had flowed from the body during the night was comparatively small. It struck me at the time that it could not have been more than a pint.

The circulation of the blood is very different in the infant and in the adult. The rapidity of it in infantile life is strongly contrasted to the measured flow in adults. The power of the heart's action in propelling the blood is likewise much less, but this deficiency in power is compensated by the rapidity of the stroke.

The want of language in infants, to express their sensations and to tell where their pain lies, excites a stronger feeling of interest in the treatment of their complaints, and demands from the practitioner an increased vigilance to note the signs from which he may be enabled to ascertain the nature of their ailments. In every disorder to which children are subject (excepting those which originate in a depression of the vital powers) there is more or less of acute nervous sensibility manifested. This, in the want of language in the child, is evidenced by its cries, by restlessness, and acceleration of the circulation, all indicating pain. If this pain continues for any length of time unalleviated, the function of the particular organ affected usually

becomes deranged ; and if it be a secreting organ, the secretions become diminished, and more or less altered in character, or a state of engorgement presents itself, from imperfect circulation of blood through it. The nervous sensibility of the part is *at first* increased, but afterwards becomes diminished in proportion to the general depression of the whole system. In this state the capillary vessels are said to be distended, and the calibre of the arteries diminished. Inflammation is now considered to have set in : and if the case terminates fatally, a change of the structure of the organ is found to have taken place, and this change is said to be the result of inflammatory action. When the circulation of blood in an organ has experienced interruption, and consequent engorgement has occurred, and continued for any length of time, congestion takes place, and the correctness and balance of the circulation are altered throughout the whole body. The increased action of the heart, having gone on for some period uncontrolled, at length induces great enervation in that organ. Its “beats,” though frequent, are powerless, and its muscular strength becomes more and more feeble.

The changes discovered after death in the bodies of infants who sink under disease, whether resulting from irritation, or so-called inflammation, may be said to consist almost entirely of the appearances resulting from imperfect circulation of the

blood. In the brain, effusion may be found, quite sufficient to be assigned as a cause of death, although no suspicion has been entertained of any serious lesion having occurred in it: and in the chest, likewise, effusion is frequently discovered, although the lungs may not have been the chief seat of disease.

Effusion within the "solid cavities" (as the skull and chest) is looked upon as the most common termination of inflammation. It is also one of the most frequent of the *post mortem* appearances found to exist where debility has prevailed. There is also no doubt that if the death struggle is much prolonged, effusion does frequently take place during that period. Next in frequency, congestion is found to exist in various organs; the blood, from causes previously mentioned, becomes stagnant in them, and alteration of structure is the result. The most frequent alteration of this kind is to be found in the lungs. The blood becomes condensed in their substance, the watery part is thrown off, and the character of sponginess so peculiar to those organs is quite lost in the parts in which this prevails. This state is termed *hepatization*, the almost invariable result of what is called inflammation of the lungs, and of the bronchi.\*

\* Hepatization of the lungs occurs frequently in drunkards, who have taken cold, and for a time been deprived of their accustomed stimulus. The symptoms presented are



The solidified blood produces a mechanical obstruction to the free passage of the remainder through the lungs ; and there ensues great difficulty in the respiration, not more, perhaps, than one half of the lungs expanding to the inhaled air. The consequence of this is, that the blood is imperfectly oxygenated, and thus produces irritation of the brain, which again produces convulsions.

The brain, as well as the lungs, is frequently found to be in a highly congested state. More or less alteration of structure is to be discovered in it ; this consists chiefly in a softened state, the texture appearing loose and imperfect. It is very unusual to discover any alteration in the pleura in children who have had severe affections of the lungs. When inflammation of these structures has occurred in the adult, adhesions to the walls of the chest, and effusion within the cavities, are frequently found to exist.

strikingly similar to the analogous affection in the infant. The action of the heart has been gradually weakened from the depressing influence of intoxicating beverages, and is reduced to a very low amount of power. When, in a case of this kind, inflammation of the lungs has been presumed to exist, and bleeding has been practised, the breathing, in a very short period, becomes laboured and oppressed, the face blue, and the powers of life seem hastening to a close. Nothing but stimulants of the most decided character, as carb. ammon. can now give a chance of life, by increasing the power of the heart's action, and enabling the blood to circulate through the lungs.

It is important to bear in mind, as a fact in pathology, that inflammation, when it occurs in mucose membranes, is more easily relieved by remedies which soothe, than by those which lower, from the facility with which the secretions are poured forth and are discharged. The opposite occurs in inflammation of serous membranes, or those which invest organs in *shut* cavities, as the lungs, brain, and pleura. It is very rare to find these membranes affected in children.

Inflammation of the liver is considered a rare disease in infants. This is the more remarkable, as it is the largest gland in the body. It is, however, very liable to deranged and imperfect action from numerous causes, the chief of which is sympathy with the derangement of other organs. When the functions of respiration are impeded, engorgement of the liver is frequently produced; and the same occurs when the brain is affected. It sympathises most acutely with affections of the stomach and bowels.

Parents take extraordinary care to prevent their children from eating or tasting any article of confectionery, cake, &c., which has been interdicted as being "unfit for them," and which at most might produce but a slight disorder of the stomach and bowels, yet they are quite heedless of the dangerous consequences attendant on a fashionable costume for the display of the proportions of their children.

It is well known that, on taking cold, the part most affected is the upper portion of the chest, which is that least protected by nature against its effects. The air-passages here are of larger size, and the windpipe or trachea divides to form the bronchial tubes, which terminate in the whole substance of the lungs. The effect of cold is to throw a greater proportion of blood on these delicate structures, producing a shortness of breathing and cough; the hands, arms, and feet, become cold, and the voice husky. The more difficulty there is in drawing the breath, the more numerous are the respirations, and the more restless the child becomes. In a few hours fever sets in, and then the arms, hands, and feet, are no longer chilled. In prescribing for a child in this state, the long-continued irritation, arising from the previous undue distribution of the blood in consequence of the exposed state of the child, is but too frequently forgotten; the fact, that an unequal and inconstant diffusion of blood over the whole body must be at the expense of the due performance of the functions of the weakest organ, never occurs to the mind; and for the cure of this state of excitement, there is too often adopted a system of treatment totally opposed to all correct principles of physiology, and therefore likely to entail lasting injury upon the child.

From the notion that an inflammatory state must necessarily exist where the constitutional disturb-

ance appears so great, the breathing so short, and apparently painful, the cough harsh and dry, the pulse beating with so much velocity, it is generally concluded that inflammation has attacked the substance of the lungs themselves, or that the air-passages (bronchi) have become the seat of the inflammation.

The prevalent opinion, that the progress of inflammation in children is so very rapid that there is but little time for the operation of lenient remedies for its removal, is, I think, an error which often produces great mischief. The symptoms usually produced, from the activity of the means used to subdue it, so exactly resemble those of violent inflammation in the adult, that the more antiphlogistic measures are employed, the greater appears the necessity for further depletion. I have frequently seen that instead of the breathing becoming freer after the abstraction of blood, it has become more hurried; there was a blueness about the mouth indicative of impeded circulation; and the greater the quantity of blood removed, the stronger were the evidences of its imperfect passage through the lungs.

This state of things produces two results, which are observed after death. There is more or less effusion of serum, and of hepatization of the lungs; both states distinctly arising from the impossibility of the blood circulating freely through those

organs. The former I take to be the exudation of the watery portion of the blood which is thrown off, from the oppressed state of the respiration, and the latter to be a condensation of the thicker parts in the cells of the lungs, forming a solid mass.

It would seem, according to the generally received theory of inflammation, that the most effectual way to prevent this state of congestion (which it really is), would be by abstracting blood from the engorged lungs, and that this treatment would give the little patient the best chance of relief. On this point the results of my own experience have led me to a different conclusion. I am well aware of the extreme value of blood-letting in the adult in inflammation of the lungs and pleura; but as I hold these diseases to be as rare in the infant as inflammation of the kidneys, or prostate gland, I also maintain that in children the treatment, with respect to depleting measures, ought also to be essentially different.

For the sake of perspicuity in detailing the various symptoms and peculiarities of inflammation, methodic writers have divided it into several kinds, which may be classed under two general heads, namely, sthenic and asthenic. The former is supposed to be the form of inflammation which occurs in robust persons, in whom the blood is rich, or abounding in fibrine, and who best can sustain its

abstraction. Asthenic inflammation is distinguished as that which occurs in persons whose physical powers are of a low standard, in whom the functions of life are carried on with less vigour, and whose blood is deficient in fibrine, but abounds in serum.

Now, as the term Inflammation, however qualified, is apt to suggest to the mind the same general idea, and as, in practice, sthenic inflammation is frequently considered as differing from asthenic merely in degree,—just as a strong man differs from one who is weakly,—I consider the employment of the term “asthenic inflammation” highly objectionable. It is apt to suggest a treatment which may only be applicable to the former; and it is very likely to mislead a junior practitioner when called in to a person of feeble powers in whom symptoms of inflammation are presumed to exist, but which in reality are only the symptoms of irritation. Patients of this class can ill bear the loss of blood; and the effects upon their system are highly injurious.

No person whose blood is deficient in fibrine can bear the loss of that fluid with impunity; and as this state of the blood is predominant in infants, they suffer as greatly from blood-letting as adults of feeble organisation and of constitution similar to the delicacy of infancy.

IRRITATION is the term most expressive of the peculiarities found to prevail in persons of this

class; and as blood-letting is inadmissible for the removal of this state of disease, the adoption of this term would indicate the danger, if it did not entirely prohibit the practice of blood-letting as a remedy in the treatment of what is called asthenic, or sub-acute, inflammation.

If the affections of the lungs and brain of children, arising from imperfect circulation of the blood, were restricted to the term "irritation ending in congestion," instead of "inflammation," a more correct idea would prevail as to the real state of their diseases. A method of treatment would also be adopted, which would not involve the necessity for blood-letting; and the efforts of the practitioner would be directed to restore, by more lenient and less exhausting remedies, the circulation of the blood to a healthy equilibrium,—the disturbance of which gives rise to so many dangerous complications in the maladies of both children and adults.

## CHAPTER II.

## IRRITATION.

OF all the subjects which come within the range of the practice of medicine, there is none more important to the practitioner than the study of Irritation; and there is none more certain to reward the attention devoted to it, not only in directing the treatment to be adopted in the diseases of infants, but in those of adults also. Though the term, Irritation, is in itself simple, it is yet of wide and extensive bearing, as generally expressive of organic or functional derangement which is neither accompanied by, nor results from, inflammation.

A knowledge of the influence of irritation as a cause of disease, is to the medical practitioner what the compass is to the mariner; it guides him in the detection of disease; gives him confidence in combating it; and enables him to steer clear of many of the difficulties which would otherwise beset him in forming his opinion of the exact nature of the



malady which he is called upon to subdue. It also prevents him from diminishing, in the smallest degree, the powers of the system, which are so necessary to be husbanded for a tedious convalescence, and the improper reduction of which, from a mistaken idea of inflammation, so frequently proves fatal in the treatment of the diseases of children. Some children, indeed, struggle through the ordinary course of treatment employed for the cure of their apparent inflammatory complaints, but the bills of mortality bear witness that a much greater number sink under it.

The importance of the fact, that most of the diseases of childhood arise from irritation, is not yet sufficiently acknowledged by medical men. Many, however, who have had great experience in the treatment of infantile complaints, are well aware of its influence, and regulate their treatment accordingly; while others, though admitting its predominance, yet adopt a system of treatment, comprising blood-letting, leeching, and the antiphlogistic regimen, which though adapted to subdue inflammation, yet greatly aggravate the symptoms dependent upon irritation. It is asserted by those who adopt this course, that irritation leads to inflammation. It is possible that this may occur in the diseases of adults; but my experience leads me to doubt if ever it occurs in the diseases of infants.

The ability to distinguish whether a disease arises from irritation, or from inflammation, is of such great importance that attention cannot be too forcibly directed to the means for acquiring it. As diseases which partake of the character of irritation frequently simulate the appearances of inflammation, it may be said that the successful treatment of infantile diseases depends almost entirely on a correct recognition of a state of irritation as distinct from inflammation; for if a disease arising from irritation be treated as an inflammatory one, the unfavourable symptoms become greatly aggravated; and the more energetically the means for combating inflammation are employed, so does the *apparent* necessity for their continuance become the more striking: the greater the exhaustion consequent on "active treatment," the more marked are the symptoms of irritation.

On the pathological relations of irritation, Dr. Copland observes:\* "If an irritant or stimulus act upon a living tissue or organ, certain changes, having reference to the nature of the functions discharged by the tissue or organ which is acted upon, and to the properties of the agent employed, are thereby produced. If the digestive canal be acted

\* Dictionary of Practical Medicine, article, "Irritation." In this article is comprised the substance of all that is at present known on the subject.

upon by one particular irritant, certain of its actions are augmented or modified ; if a different irritant is employed, others of these actions are increased ; and if the irritant be more powerful, or in excess, the effects are locally heightened and extended to remote parts. If the external structures and organs be irritated, sensibility is excited, and all the functions of the heart more or less increased, or otherwise affected. Whatever may be the function of a part, such function will be exalted by a moderate irritant ; but it will be disordered, or even overturned altogether, by an excessive one, owing to the efforts thereby produced in the circulation and organisation upon the part upon which the irritant has acted."

" If a portion of the intestinal canal be irritated, either by mechanical or chemical stimuli, its contractility is first augmented. If the irritating cause, or the irritation, however excited continue for a time, the secreting functions and the circulation are affected ; and if it be energetic or excessive, these are still more increased, and sensibility so obscurely bestowed on this part is acutely roused."

" In addition also to these changes, the irritation, which was limited, whilst it was slight, to the parts more immediately subjected to its causes, now extends itself, influencing different systems and parts ; and owing to the connexions of the organic nervous system with the cerebro-spinal, not only is sensation

acutely affected, but also the contractions of voluntary muscles are violently excited, without either the influence or the control of the will."

"In this manner, irritation of one part of the intestinal mucous surface often proceeds along it; or irritation of one part of the muscular coats of the bowels frequently extends along the tube, or affects it to a greater or less extent, as in colic and hysteria. The morbid impression also made upon the organic or vital nerves of one tissue or viscus, is often transmitted thence to an adjoining, but differently constituted organ through the medium of those nerves which are supplied to both. Thus, the irritants which affect the nerves of the duodenum of the stomach primarily, extend their operation in many cases also to the liver and pancreas; and stimuli which excite the stomach raise the action of the heart and vascular system. Irritants of the kidneys frequently render the urinary bladder more irritable, or excite this latter viscus; and those of the rectum often extend their influence to both the urinary and genital organs."

"The limitation of irritation may be so complete that one function only of one organ is affected; but this seldom is of long duration without other functions and organs experiencing disorder."

"The extension of irritation, particularly when seated in an internal or vital part or viscus, takes

place either *directly*, by means of the communicating ramifications of the organic or ganglial nervous system, or *indirectly*, and by a *reflex* operation of the ganglial nerves, conveying the morbid impression or action to the roots of the spinal nerves, or to the spinal cord and brain, and thereby exciting the sensations or actions of parts supplied with nerves by the cerebro-spinal system, or in both these modes, either consecutively or contemporaneously."

"The *direct transmission* of irritation may take place either along parts or tissues similarly constituted, as mucous or serous tissues, or from one organ to another, by means of the organic nerves with which they are supplied."

It is a well-known physiological fact, that there is no function of the body which is not liable to deranged action, from the influence of irritation, whether it be in the circulating system, the respiratory, sensory, secreting, or absorbent organs; and that such derangement may occur from sympathy, direct, or remote, with other organs, or functions of them, in a preternatural state of excitement.

The functions of the brain may, for a time, be completely or partially paralysed, assuming all the characteristic signs of apoplexy, or of partial stupor, in consequence of the pain attendant upon teething; or from the irritating effects of undigested, or improper food in the stomach. Convulsions, also,

will arise from similar exciting causes ; and worms in the intestinal canal will give rise to the like train of symptoms. External impressions of a powerful kind will likewise exert similar irritating powers, and produce convulsions.

The following anecdotes will illustrate this last remark. It is related that a nobleman of the highest rank, after anxiously waiting many years for a son and heir, had at length his wishes gratified. The christening was to be celebrated with great pomp ; and to make it more imposing, it was determined that it should be performed at night. The apartments were lighted with the utmost brilliancy ; the company were all assembled, and the infant duke was brought into the drawing-room. The sudden glare of light caused almost instantaneous convulsions, from which the child never recovered.

Dr. Garthshore's son married a lady very highly connected, and her son—provided she had one—was to inherit a large estate. Consequently, when her first son was born, there were great rejoicings at his christening ; and a bishop, who was related to the mother, was invited to perform the ceremony. When he arrived, the servants knocked so loudly at the door that the child was frightened into convulsions, from which it never recovered, but died soon after.

The trachea will experience irritation from the operation of remote causes of irritation. Spasmodic

croup will arise from acidity and flatulence in the stomach and bowels ; and violent spasmodic cough from the same causes.

Crowing respiration, or laryngismus stridulus,—fortunately rather a rare disease,—has its origin from irritation of the nervous system, produced by derangement of secretion in the first instance ; and deterioration of the blood, inciting to unhealthy action the nerves of the upper part of the trachea and larynx.

The heart will frequently be found to be excited to violent action, in the form of palpitation, from sympathy with deranged stomach and liver ; and loss of blood and general debility will produce the same result. Flatulence is a common exciting cause of palpitation. Acute pain will be found often to affect the heart, in consequence of derangement of the stomach and liver. The lungs, and air-passages, are perhaps the most frequently acted upon by the different sources of irritation. Cold is one of the most common causes of their derangement. In numerous instances I have observed that children, when properly clothed, have escaped entirely, during the first year or two of their existence, the ordinary affections of the chest ; and this in so remarkable a manner, that I have come to the conclusion that clothing may be regarded as a certain prophylactic against disease in those organs.

A young infant may be able to endure the ex-

posure of its arms, chest, and legs, with impunity, so long as it is not cutting its teeth. When, however, this process commences, the irritation which it produces in the system, seems to deprive the air-passages and lungs of their previous power of resisting the effects of cold. Indigestion also produces spasmodic irritation in the lungs; and I have known an abscess forming in the ear produce the greatest disturbance in the respiratory functions. Indeed any source of pain is liable to affect the extreme susceptibility of those organs.

The stomach, liver, and bowels, are among the organs, which, when suffering from irritation, most commonly disturb the functions of other viscera. Teething will affect the digestive powers of the stomach, occasioning sickness, and loss of appetite. The bowels, also, will occasionally be found to suffer from increased excitement, when this state prevails, and a purging will supervene, more or less severe.

Thus it will be perceived that the nervous organisation of infants is of the most delicate kind, and susceptible in the highest degree. As might naturally be expected, the tenderness consequent upon early life, makes them much more liable to receive powerful impressions, from slight causes of irritation, and to be more powerfully acted upon by them than children who have accomplished the first stage of infancy, and passed through their first dentition, the most frequent of all the sources of irritation.



After children have attained to the age of three years, disease, in consequence of irritation, solely or chiefly, becomes less common; and sudden attacks,—which are observed to proceed most frequently from the various sources of irritation in the first and second year,—are of more rare occurrence. Where disease exists, however, irritation will still be found, although lessened in its general prevalence, and also in intensity; in consequence of the increased power of the nervous system and the greater strength of the body, which are thus rendered more capable of resisting its influence. In all the maladies of children, indeed, irritation to a certain extent exercises its influence; and the neglect of this fact may be dangerous, even in the treatment of diseases of adults.

As, in the earlier stages of life, the organs of respiration suffer most from irritation, so, in children of more advanced age, the brain is the organ which most frequently suffers from increased nervous excitement. Derangement in the functions of the brain, proceeding from this cause, is observed to prevail, more especially, in young females; although boys of a delicate nervous organisation are frequently found to suffer from it, until the age of puberty has arrived. Inflammation of this organ, at any time between the ages of three and fifteen, is not considered of uncommon occurrence.

The strong desire manifested by many parents

to make their children *clever* is too common at this period; and the means employed to effect this is frequently one of the causes of functional derangement of the brain, in consequence of its being forcibly and unnaturally excited. It is in children of acute sensibility that attacks of this nature are usually witnessed. Such children are mostly of slighter figure, and are more easily excited than those of a robust frame. They are "precocious children;" and their temperament is chiefly nervous: the attention being confined chiefly to study, the body does not attain that degree of muscular development necessary to constitute a strong boy or girl, and to enable them to take exercise sufficient to keep them in health. This, however, is not the only cause of irritation taking place in the brain. Too rapid growth of the body, inducing general debility, is frequently found to produce languor in the circulation, and consequently an insufficient supply of blood to the brain, thus occasioning failure in the correct performance of its functions.

I may here remark, that gymnastic exercises are often adopted to make up for the deficiency of the more natural and healthy exercise of walking and running; and are looked upon as even more than equivalent to those free and unconstrained movements, which nature dictates to the young. Those artificial substitutes for natural exercise have a very baneful tendency. All exercise is hurtful

to the young which does not equally bring into action the whole of the muscles of the body at the same time. In this system, there is violent and forced action of the muscles of the arms at one time, and of the legs at another, so that some portion or other of the body must, of necessity, be overstrained;—besides the absurdity of making children perform that amount of labour (pleasure it is called) which is scarcely safe for adults. It is as unsafe to disturb the healthy equilibrium of muscular action in the young, as it is to demand of them that exercise of the brain, which should only be looked for at a more mature age, when the body has experienced a corresponding developement.

A few cases in illustration of the effects of irritation in infants and adults, may serve to explain more clearly the influence exercised by it on the general economy of the system, and in the production of disease.

I saw, one night at eleven o'clock, a little girl of a year old, who was lying in her mother's arms perfectly insensible and motionless. The eyes appeared sunk, the face was pale as death, the skin cold, and there was scarcely any pulse perceptible at the wrist. The nurse had put the child to bed at eight o'clock, when it seemed quite well and cheerful. At ten she was surprised and alarmed at its deathlike look, as it lay in the cradle. The

mother had begun to wean it two days before; and it had had some light rice pudding made with egg for dinner. The child was at the time cutting some teeth, but without any apparent disturbance to her system. Rather for the purpose of rousing the child, than with the view of allaying any local irritation, I lanced the gums, which appeared neither swelled nor inflamed. The child almost immediately began to notice, but did not cry. In a few minutes it smiled. I gave it a powder composed of Calomel gr. i.; Pulv. cinnamomi. comp. gr. ss.; Pulv. rad. jalapæ gr. iv. The powder operated by the morning, bringing away a quantity of most offensive fæces, in which a considerable portion of the undigested pudding was visible. She was now quite well,—only looking a little more pale than usual.

In this case the sensibility of the brain was almost completely paralysed, the only evidence of life being the feeble beating of the heart. The limbs fell, when lifted up and let drop, as if the child were dead. It is interesting to consider what would have been the result in this case if the nurse had been less attentive to her charge, and not watched it during its sleep. If the child had been allowed to lie until morning, or even a few hours longer, would not convulsions have taken place? Would not irritative fever have set in? And

would not, then, all the symptoms have occurred, that are usually looked upon as indicative of inflammation of the brain? I have seen many cases formerly of that disease, which I believe had their origin from causes very similar, but which were primarily treated as if inflammation had already set in.

On another occasion, also late at night, I was hastily summoned to attend a child of ten months old, which was said, by its father, to be suffering from inflammation of the chest. His apprehensions much disturbed him, having lost a little girl at the same age some time previous, from the same supposed malady. I found the child, feverish and restless, not retaining the same posture for a minute; its respiration was hurried, and its face of a purple hue. It had a hard dry cough, with evident pain attendant upon the effort. I examined the child's gums, and found them much swollen, two large teeth pressing immediately below the surface. I lanced the gums, and the child became comparatively tranquil. The tongue was foul, as it always is in these cases. In two days' time the child was quite well.

In this case I remember having to combat the desire of the parents that leeches should be applied. Their former little girl had been leeches, and they looked upon this attack as so identical in character with her's, that they considered the application

of leeches to be a necessary part of the treatment, although the result which has been noted took place.\*

When the younger child was so suddenly attacked, the parents had no idea of the cause, for they had not previously observed any symptoms of indisposition which might have been the result of cold. The access of irritation in the respiratory organs was sudden; and the child, which had been put to bed in apparent health, awoke during the night in pain. Night, indeed, is the time when these peculiar affections are observed to be of most frequent occurrence, the confined air of the bedchamber predisposing to irritation of the lungs. Well ventilated rooms are of the first importance for children to sleep in, especially during dentition. The good effects of such rooms can never be too highly appreciated.

In those two cases of sudden attack, the infants, in consequence of prompt assistance being rendered, speedily recovered. I will now mention a case, in which, from an error in the formation of opinion, in the first stage of attack, the recovery

\* The medical gentleman who attended their former child had pronounced the symptoms to be those of inflammation. This is one of the many cases that might be brought forward in evidence of irritation during dentition being frequently mistaken for inflammation.

was protracted. It is a case independent of the irritation arising from teething.

A little girl, aged five years, awoke and screamed violently in the middle of the night. A practitioner living near was hastily called in. He found the child feverish and restless, and apparently much alarmed and agitated. She complained of violent pain in the forehead, and eyes. The light of the candle was intolerable to her. She talked incoherently, and was never still. He administered calomel and a black draught, and ordered six leeches to the temples. He thought she was suffering from a sudden attack of inflammation of the brain. In the morning I was sent for; and when I saw her, the violence of her manner, from the description I received of it, had not at all diminished during the night. She tossed about incessantly; at intervals complaining of the violent pain in her forehead, and expressed the greatest alarm at any person going near the windows, for fear they should raise the blinds to admit the light. Her skin was moderately cool, as was also her head; the pulse soft, and not rapid, and the tongue clear. The medicine had operated well. I wished to examine her eyes, as she complained of so great pain in them, but she began to scream at the bare idea. From the account which I received of the case, and of the treatment adopted, I felt some difficulty in forming, from the symptoms, any distinct opinion

of the real character of the malady. I, however, determined to proceed cautiously, looking with some suspicion at the occasional intervals of repose which she enjoyed, when she appeared as if but little was the matter with her; and when this state of temporary tranquillity occurred, her pulse was small and feeble. She had lost a good deal of blood from the leeches.

As I was very anxious to examine the state of the eyes, and as she still resisted the full admission of the light, I directed a relative to conceal herself near the window, whilst I engaged the child in earnest conversation, and to slowly raise the blind. This was done, and the blind remained up without her making the slightest observation respecting it for some time, though the light came full upon her face. At length, when she became conscious of the circumstance, she did not scream, but complained only slightly of the annoyance. Her eyes were not at all red, nor were the pupils dilated. This decided me as to the course to be adopted towards her. I gave her medicine of a soothing character for some days, which lessened the nervous irritation, but did not prevent a return occasionally of the violent excitement. I then altered the mode of treatment, and gave her sulphate of quinine, with sulph. of iron, ext. gent., and aromatics, and she soon derived benefit from these medicines. She continued taking them for three weeks, and got quite well.



This case is interesting as being one, amongst the numberless instances that might be adduced, of a direct cause of irritation proceeding from the brain itself. In no other organ or function of the body could any disturbance be traced as the exciting cause of this sudden attack. The analogical cases that best illustrate it, are those of hysteria. This disease is generally looked upon as taking its origin from some derangement of function of the uterus; but it is difficult to conceive that such an organ, in so young a child, could have anything to do with the production of such a class of symptoms. It is, however, true, that children whose nervous organisation is delicate (and in this case it was so) are very liable to affections which strongly resemble hysteria. There is no disease in which the symptoms of irritation are so powerfully marked as in this.

There is no period of life, from the earliest infancy to extreme old age, in which the effects of irritation may not be found, as influential in producing disease.

To illustrate the effects of irritation in the adult, I will mention two cases, which are valuable in their application to the treatment of infants.

I attended for some weeks a gentleman, aged 45, who was suffering from a chronic affection of the mucose membrane of the stomach. It was necessary that he should pay the strictest attention to his

diet, and this attention was enjoined. He was gradually improving in health and strength, when he suddenly gave way to the imprudence of eating largely of cold lamb and salad, and of afterwards drinking about a quart of table beer. Soon after his meal, he was seized with an oppression at the chest. He felt as if he were becoming suffocated. I was sent for, but living at some distance, did not arrive so early as another practitioner, who had, without inquiry into his previous state of health, proceeded to bleed him from the arm. He took about a quart of blood, supposing that the patient had apoplexy of the lungs. Soon after the bleeding, he was sick, and brought up all his dinner. This gentleman never recovered from the effects of the blood-letting. He became an altered man. A month after this attack he looked as if he were seventy years of age, and died within a year. If an emetic of mustard and hot water had been administered, the result would probably have been different.

I was sent for late one night to see a young lady of delicate constitution, who had been coughing incessantly for three or four hours. The cough, which came on suddenly, was hard and dry, like the barking of a dog. When I arrived she had six leeches hanging to her throat, which had been applied by a surgeon who, living nearer than myself, was called in to see her. Her tongue was foul, and she was much exhausted. I took the

leeches off, and administered two tumblers of mustard and water. Very shortly afterwards she vomited, and brought up half a washhand basin full of black offensive secretions from her stomach. The violence of the cough immediately ceased, and it soon left her entirely. Not so the effect of the leeches. Her blood being very watery, would not coagulate; and it was some hours before the bleeding could be stopped. She suffered much from debility for three months. The gentleman who ordered the leeches, looked upon the cough as arising from inflammation of the larynx.

A short notice of some of the peculiarities and appearances found in those children who are most liable to attacks of disease, proceeding from irritation, will perhaps be interesting as well as useful to the young medical practitioner. Children of the nervous and sanguine temperaments, characterised by light eyes and hair, with fair skin, are more speedily acted upon by it, than those of a bilious or phlegmatic temperament, whose eyes, hair, and skin, are dark. In the former, there is greater rapidity of circulation, and they are generally "very lively children." In the latter, the circulation is slower, and they are less animated. The susceptibility to receive impressions, of an irritating nature, is therefore much more acute in the sanguine and nervous, than in the bilious and phlegmatic. The effects of medicines on the two are also very different. Children

who come under the first denomination cannot bear so strong an aperient as the latter, and it is found that the doses of other medicines require the same limitation in quantity.

There are, however, "mixed temperaments," such as a combination of the nervous with the sanguine, the nervous with the bilious, &c.

It is, therefore, of the greatest importance to ascertain the temperament of a child previous to prescribing for any disease from which it may be suffering.

"Infantile physiognomy" is a subject of paramount importance for the medical man to study. From the expression of disease in a child's face, there is often information to be derived, which cannot possibly be otherwise obtained.

If a child looks heavy about the eyes, and the face is pale; if it moves, or rolls its head from side to side, is cross, and cries frequently, it, in all probability, suffers from headache. If it frowns, and appears to dislike the light, there is reason to apprehend that there is a partial obstruction in the circulation of blood in the brain.

If the features seem pinched, (the muscles of the face and forehead being contracted,) with a bluish tinge occasionally on the upper lip, about the alæ of the nose, and angles of the mouth, the latter being puckered; if the legs are also drawn up, and the child screams and cries by "fits and starts," the

child is probably griped, and suffers from flatulence and acidity in the stomach and bowels.

If the lips, mouth, and tongue, are dry, when the child is teething, all flow of saliva having ceased, there is irritation, with pain, in the gums.

If a child is pale, and the flesh feels soft and flabby, blue veins being apparent on the forehead and between the eyebrows; if it seems wanting in animation, and only occasionally smiles; if it has a peculiarly resigned and meek expression about the eyes;—it is certain that this child's blood is deficient in red particles, and contains more serum than is compatible with health. It is in such children that sudden death from laryngismus stridulus (or crowing respiration) mostly occurs.

The eye itself is, in most cases, an infallible index of the state of the brain. If the pupil contracts on exposure to light, the brain is suffering from irritation. This irritation may be so great as to produce delirium, and yet be attended with no dangerous result, such as effusion, provided the treatment employed be applicable to derangement of function alone.

If the pupil is dilated, and remains so on exposure to light, we may be sure that there is congestion of the brain. This congestion may either be from imperfect circulation of blood through the brain, or from effusion within the ventricles; for the

former, should it continue for any considerable time, usually produces the latter.

It has generally been considered that the pulse in children is a very uncertain guide, and that little information is to be gained from it. This, to a certain extent, is true ; but though there are many “ indicators ” of more importance, yet neither is this without its own peculiar value ; and it is in the most serious diseases to which they are liable, that it acquires its greatest importance. It may be either rapid, full, small, wiry, or tight ; and careful study of its peculiarities will often enable us to say, when the antiphlogistic remedies are to be abandoned, and the restorative and stimulant adopted.

The skin is also a good guide, both as to its colour and texture. If the skin be harsh and dry, we may be sure that some source of irritation is existing in a vital organ,—either the stomach, liver, or bowels. If the colour be of a dirty yellow, the liver is at fault. If it be of a bluish white, or “ pasty,” we may be sure that the blood is in an unhealthy state, and that most of the secretions of the body are deranged in consequence.

If a child be “ fractious and cross,” there is not much danger to be apprehended. Crying is never to be looked upon with alarm. However ill children seem to be, if this exists, they may surmount the malady.

The language of infancy consists in crying, and there is more danger to be apprehended when this is absent, than when it exists in its utmost intensity; yet a severe fit of crying in a healthy child, will have the effect, if long continued, of producing a strong appearance of congestion in the lungs; the face will turn pale, the breathing become quick and short, the voice harsh and dry, and the utmost restlessness prevail, until the tranquillity of the circulation is restored.

When, from exhaustion or other causes, a state of indifference and apathy to external things and impressions prevails, it must be looked upon with great apprehension. It indicates that the powers of life are on the wane; that the strength is gradually sinking; and that there is torpor in the brain,—resulting probably from effusion on it, from languor of circulation through it, or from the blood being of so watery a consistence as to fail in communicating that degree of stimulus, which, in its healthy state, it never fails to impart.

The position of a child should always be attended to:—when called in to see a child which is said to be alarmingly ill, and it should happen to be asleep, the manner in which it reposes ought to be noticed. If it be lying upon its side, the arms naturally and easily bent, (perhaps the head resting upon one of them,) with the thighs drawn up towards the belly, we may safely say, without much risk of error, “there is no danger

about that child," even without making a single inquiry as to its illness. But if a child is observed to lie upon its back; its legs stretched straight out; the arms also extended, the hands clenched, with the thumbs bent towards the palms, there is much reason for apprehension. Rigidity in any muscles of the body, indicates the presence of powerfully irritating causes.

I have known many medical practitioners, of first rate ability in the treatment of disease, declare, that they always went with a feeling of dislike and uncertainty to a child that was ill. One, a physician of great talent and experience, expressed himself, as feeling "like a veterinary surgeon when children's diseases were brought before him. There was so little to be made out of the child's case, excepting from its cries."

The want of some fixed rules for his guidance, in the treatment of the diseases of children, has, I should think, been experienced by almost every practitioner in the earlier periods of his practice; and the more especially in those cases where he would find the greater difficulty in forming a decided judgment of the seat of the malady, in consequence of the want of language on the part of the child, which can express its sufferings only in the unmistakeable cry of pain and agony.

In the want of a sure guide, the first step towards the right way is an abandonment of the



beaten path of error : to cease to do wrong in the treatment of disease is, of itself, a positive good. Now, in my opinion, the great evil in the treatment of the diseases of children, consists in the abstraction of blood from infants, and in administering to them drastic purges,—an opinion which has been formed from having so frequently observed the fatal results of such a course, and from having so successfully adopted a contrary practice. In a matter of so great moment, I trust that I may thus simply state the result of my experience, without being blamed either for concluding precipitately, or for presuming too confidently on my own mode of treatment.

The idea of inflammation has but too frequently haunted the minds of many practitioners when called on to prescribe for the diseases of children ; and hence, by persons whose imagination has been thus excited, almost every severe attack of illness in a child has either been directly assigned to inflammation, or in some degree connected with it.

The importance of distinguishing between the symptoms of inflammation and of irritation cannot be too strongly urged. To distinguish clearly, however, in many cases, considerable discrimination and experience are required ; and in all it is necessary that attention should have been directed to the prevalence of irritation, as an exciting cause of

maladies. Every practitioner must have experienced the disappointment which sometimes attends his best endeavours to relieve a suffering child ; and been apprehensive of the effects of his remedies, more especially when he has had any doubt of the cause of the disease. But by bearing in mind that morbid irritation exerts a powerful influence over the diseases of children, the treatment becomes more simple, and greater confidence is acquired. This consideration will, in a great measure, prevent the very common occurrence of the strength of the child being prostrated at the onset of its disease, by the use of exhausting and lowering remedies. It will lead the practitioner to observe that children's diseases are not so speedy in their termination as is usually supposed ; and that where he has hesitated to abstract blood, and has used more lenient means, he has been rewarded,—that the child, so far from sinking or dying immediately for want of blood-letting, has not only survived, but has proceeded rapidly to recover its usual state of health ; while, by a contrary treatment, if it survived at all, its convalescence has been slow and protracted.

When children are ill, too much is usually done in too short a time ; and sometimes this quick practice appears to be successful. Every one, indeed, must have noticed the extraordinary recovery of some children after the most severe antiphlo-

gistic treatment; and such recoveries are often cited as evidences of the good result of bold practice, without any reference being made to the many other children who have been treated in the same manner, and have sunk under it.

The *vis medicatrix naturæ* in children is very great; and it is important that this power should be fostered and cautiously aided by medicine in the treatment of their diseases. This fact should also be constantly borne in mind in the treatment of adults.

The practice of bleeding and leeching is inadmissible in diseases having their origin from morbid irritation. The only instances in which I have ever observed blood-letting and leeches borne with *comparative* impunity, as remedies for subduing what are termed the “inflammatory diseases” of childhood, have been, at the earliest possible period of the attack, whatever it might be, and when the greatest care was observed in limiting the quantity of blood taken; and in these instances the children were of strong constitution. But even in these cases, in which every possible caution had been exercised, I have observed that the children long looked pale and sickly after the abstraction of blood; and that some of them sank on a renewal of the disease, to which the treatment adopted appeared to render them more liable. Children who live in the country can bear the loss of blood better than those living in

towns, but still, even in the country, the mortality is very great from the adoption of the practice.

The treatment most successful in allaying irritation, consists in the use of remedies suitable to the organs which may be attacked. These comprise emetics, sedatives, and stimulating embrocations, when the lungs, or the bronchi, are attacked; sedatives and aperients, of a well-regulated strength, and febrifuge medicines, when the brain is the seat of disorder.

As the treatment of each disease will subsequently be specified under its proper head, I shall merely give here a single case as illustrative of the general subject. It is one in which the brain was prominently effected; and as it is of considerable interest, I present the details as I noted them at the time in my journal. It is but right to state that the treatment adopted was entirely suggested by an eminent practitioner, whose penetration and judgment in the detection and cure of disease are too well known to require any eulogium here.

A little girl, aged three years and nine months, had been for some weeks residing in the country, and had had free access to a garden where a quantity of wind-fall apples were to be found, and of which she ate a great number every day. It was noticed that she had not looked well for a fortnight previous to the attack, and that she appeared to have grown tall and thin. On her return to town she looked pale. Her appetite was variable, and

she was sick every other day. Her pulse was weak. She had a purging which continued for two days.

On the 5th of October, 1843, she was suddenly seized with great restlessness and delirium; the skin became intensely hot. Her tongue was red; the papillæ white and slightly raised above the surface. This soon changed to a dry chalky appearance; there was no thirst; the bowels had become tranquil; the water was clear; the pupils of the eyes contracted freely when a light was applied to them.

The surgeon, just mentioned, saw her this day, and ordered two grains of Dover's powder every four hours, and effervescing draughts with soda and lemon juice. This was at 11 A. M. He saw her again in the evening, when she was more restless than before,—screaming or moaning incessantly, snatching at imaginary objects in the air, or picking the bed-clothes with her fingers; her feet were now cold. He ordered a draught composed of the following:—

R. Potassæ bi-carbon. gr. x. .  
Succi limonis ʒij.  
Liquor. opii sedativ. ℥iij.  
Syrupi tolutani ʒss.  
Aquæ distillat. ʒvj.—Fiat haustus.

This she took at bed-time, still continuing the powders. During consciousness, she strongly and determinately refused to lie in bed, and would rest nowhere but in the nurse's arms. She continued

restless all night, breathing with a short catching sob; and cried and screamed continually until four o'clock A.M. She passed water for the first time during the twenty-four hours, which deposited a copious red sediment. She appeared easier, ceased crying and screaming, lay more composed, but continued to breathe in the same manner.

October 6th. This morning she took a powder composed of Pulv. scam. cum cal. gr. v. It did not operate, and was repeated at three P.M. The result was rather a copious evacuation of liquid unhealthy fæces. To omit the Dover's powders, and to take no other medicines than the following every six hours. R. Potassæ bi-carb gr. x. ; Succ. limonis ʒij. ; Sy. tolut. ʒss ; Aq. ʒi. If the restlessness returned at night, she was to have five drops of Battley's solution of opium in one of the saline draughts. She took about half a pint of beef-tea during the day.

October 7th. The child had slept tolerably well during the night, without the sedative. The tongue this morning is cleaning at the tip. There is a thick creamy whitey-brown fur, extending over the whole of it. She appeared to like her mixture, and took it readily. She slept much during the day, but appeared restless and uneasy when awake. Took more beef-tea and gruel during the night than she had done before. Continued the saline mixture.

October 8th. Better to-day. This morning she took five grains of Scam. cum cal. ; the motion pro-

duced by it had a dark bilious flocculent appearance. Ordered to continue the saline mixture, and take one of the following powders every six hours. R. Hyd. submur gr.  $\frac{1}{4}$ ; Pulv. Jacobi ver. gr. i. : fiat pulvis.

The tongue is now very red. Most of the fur is removed, except at the back part, where it is still of the same thick consistence. To take the sedative draught to night.

October 9th. Had a tolerable night. The powders seemed to gripe; but when wind of a highly offensive character passed from the bowels, which it did, sometimes bringing with it feculent matter, it seemed to give her ease. There was frequent crying during the night. The child was still not perfectly conscious. This morning, however, consciousness is complete. The pulse this morning is soft, and the skin moist; she had a profuse perspiration, since which she seems much better. The tongue to-day has a slimy, mucose appearance, and is less red. The sordes are removed from the teeth; the lips free from the dry and black skin which covered them. Took more beef-tea during the night; less desirous for it in the day. To continue the powders, saline mixture, beef-tea, and gruel. Until yesterday, before she took the second powder, her limbs were stiff and stretched out to their fullest extent, whether lying in bed or in the nurse's lap. In the evening, however, she lay with

her knees drawn up, and her head resting on her hand.

October 10th. The child had had a restless night ; she took the aperient powder at seven o'clock this morning, which was repeated at one P. M., the first not acting. The evacuation better. There is but little fever to-day. The tongue looks as if *fine curd* had been deposited here and there : it is also more moist to-day. She took last night her sedative draught. Ordered the following prescription :—R. Inf. rosæ ʒi. ; syrup. rosæ ʒi ; acidi sulph. dilut. ℥v. ; ft. haust. : to be taken three times a day.

October 11th. The child continued gradually to improve from this date. Numerous boils showed themselves in different parts of the body. She is very thin and weak.

October 24th. Although she has taken generous diet, and wine, up to this time, she is still incapable of walking, and appears very languid and thin. She has, however, gained some flesh. Her appetite is very keen.

This case may be considered as the type of many others, where derangement of function occurs in an organ so important as the brain. If this child had been treated with less skill, and leeches had been applied to the head, (which in numerous instances I have known done,) as the chief remedy for calming the delirium, and subduing the violent fever



with which the attack set in, such treatment would probably have proved fatal in its consequences, or an attack of typhus fever would have occurred, which might have lasted for many weeks.

Another case which came to my knowledge, similar in its symptoms to that recorded, occurred in a girl of fourteen. She was, however, treated for inflammation of the brain, and had no less than twelve dozen leeches applied to the head during the course of the disease. Being a girl of strong constitution, she did not sink under the loss of so much blood ; but for weeks seemed suspended between life and death. This occurred in 1843. She also lost her voice, and though nearly a year has elapsed since she first became ill, she has not yet recovered it, more than sufficient to speak in a whisper. She also remains in a state of great debility, being incapable of any exertion without great fatigue. Her blood is watery, and deficient in red particles.—The abstraction of blood, by still further weakening the already enfeebled action of the heart in diseases arising from congestion, militates against the establishment of a return to a healthy state in the organs oppressed.

All the complaints of children may be looked upon as having their origin from some source of irritation in the system, either direct or remote. In children of the nervous, or the sanguine temperament, the effects are more rapidly and distinctly

developed than in those of the bilious or phlegmatic ; the susceptibility to impressions of the nervous system, being much more acute in the former than the latter. From similar causes, the effect of medicines is also more powerful on children of nervous or sanguine temperament than on those of bilious or phlegmatic.

Children, who are labouring under the effects of irritation, will bear without danger the administration of opiates and sedatives, in doses which at another time would be sufficient to destroy life. Much caution, however, is to be exercised in the employment of medicines of this class. The state of the bowels ought to be carefully attended to ; and it should be ascertained that there are no lodgments in them ; for if there be any, the remedies will only prove another source of irritation, of perhaps a more formidable character than the original disease.

Where there is much fever or heat of skin, it is necessary also to combine the opiate, or sedative, with medicines which have a cooling and refrigerating effect.

If the pulse be full and strong, the saline mixture made with bi-carbonate of potash and citric acid will be best ; if rather feeble, with liquor. ammoniæ acetat.

## CHAPTER III.

## TEETHING.

DR. ANDREW COMBE says, "To impress the reader with a full sense of the existing danger to life during the second year, and the necessity of devoting more attention to the discovery and removal of its causes, I may again refer to the fact, that, according to the Registrar's first report, 128 per 1000, or *one-eighth* of the whole number of deaths in England and Wales, occur during the second year alone. To form an adequate conception of this mortality, it will be sufficient for the reader to know, that the proportion just stated is very nearly equal to that *of all the deaths occurring between the ages of ten and twenty-nine years*; the latter being in exact numbers 138.73 per 1000, compared to the former as 128 per 1000."\*

It is during this period of the greatest mortality

\* On the Management of Infancy, p. 308, edit. 1841.

amongst children that they cut the greatest number of teeth, and are most susceptible to impressions of an irritating character. The pain and irritation, produced by this process, will occasion functional disturbance in every organ of the body ; and it should always be borne in mind, that teething gives rise to more of the maladies to which infants are subject, than any other known cause. Whenever this disturbance, arising from dentition, has taken place, either in the brain, or organs of respiration, the symptoms attendant upon such derangement of function, are so serious in their character, as frequently to prevent the attention from being directed to the exciting cause of them. The brain, lungs, air-passages, stomach, and bowels, are the organs most frequently observed to be affected from this cause. In the three first, the circulation of the blood is much accelerated ; and it is this acceleration which has so great an influence in the disturbance of their functions. The pain induced by the pressure of the teeth upon the dental nerves below, and against the gums above, occasions the heart to beat with greater violence, and to propel the blood more quickly to those parts than is consistent with their healthy action ; the return of the blood to the heart becomes impeded, and the distribution of it unequal ; it also is imperfectly oxygenated, and thus in a manner operates as a poison to the whole system. The nervous centres failing to receive blood,

of a pure and wholesome kind, soon give evidence of the fact, by the derangement of each particular viscus to which they belong, and then follows a series of symptoms highly characteristic of irritation.

When the bowels are affected from the irritation of teething, less danger is occasioned ; a moderate purging being usually a relief to the sufferings of the child. This, however, if not restrained within proper bounds, may lead to great mischief. In this state, the circulation, instead of being increased in intensity, is usually found to be more languid, owing to the heart receiving a diminished quantity of blood,—this diminution arising from the increased discharge of fluids from the body. The brain, in those cases, when morbid symptoms show themselves, is the organ most powerfully affected. And this arises from what may be strictly termed the impoverishment of the blood ; the appearance of the child clearly evincing a deficiency of red particles in it. The diminished quantity, as well as poverty, of the circulating fluid, render the brain incapable of perfectly exercising its functions. The child becomes listless and languid, and presents most of the appearances of a person who has experienced a great loss of blood. It is peevish and fretful, when awake ; and seems to prefer dozing throughout the day. This state may ultimately lead to complete oppression of the brain.

Convulsions are very common during the process of dentition. Though the attack may appear sudden, yet it will generally be found that there has been long-continued irritation in the gums previous to their appearance. In numerous instances where children have suffered from convulsions, I have given a caution to watch attentively for the future, when the child should appear to suffer pain from teething, and that the gums, when swelled, should be lanced. In every instance where this caution has been observed, the child has had no return of convulsions.

Spasmodic affections of the windpipe occur frequently in children whose nervous organisation is delicate. We also often find robust children, as well as those who are pale and weakly, suffering from this malady during dentition. A child may appear quite well, and the next moment be seized with a sudden interruption to respiration. It will struggle for breath, the face will become black, and (if it should not die) it will, after a very short time, recover, and only look a little more pale than usual. Many children die suddenly from such attacks. They are usually the pale and delicate-looking, in whom the blood has long been of a watery consistence. I have never seen an attack of this kind occur in a child when teething had ceased.

The function of respiration is most frequently

found to suffer disturbance during teething ; more so, perhaps, than any other vital function. Pain invariably produces a rapidity in the circulation, which interferes with the respiration, and causes a hurried breathing. This, from being in the first instance a state of simple excitement, may lead to the production of symptoms which have the most marked resemblance to what is commonly considered inflammation of the bronchi, or inflammation of the lungs.

Plethoric children will often have a rattling in the throat from excess of mucus in the air-passages, without any disturbance to the respiration. This is sometimes looked upon with alarm by anxious parents. There is no particular treatment necessary to be adopted, except the administration of a grain of powdered ipecacuanha at bedtime, for a few nights.

In treating the diseases of infancy which occur during the period of dentition, too much stress cannot be laid upon the necessity for a frequent examination of the gums, even although no mention is made of the child suffering from that cause. It is generally found that a child, when affected with derangement or disturbance in any vital organ, ceases to apply its fingers to its mouth ; and that the salivary discharge usually called “ dribbling,” ceases. The greater amount of pain and irritation, which is

felt in the organ newly attacked, appears to remove for a time the pain and irritation which had been previously felt in the gums.

Teething, as has been already observed, is a very common exciting cause of disturbance in the respiratory process. The violence of the pain which the child experiences naturally causes a considerable amount of fever; and the rapidity with which respiration is conducted accelerates the circulation and produces a train of symptoms which, when treated as symptomatic of inflammation, are frequently attended with the worst consequences. The more rapid the respiration, the more imperfectly is the blood oxygenated; not more than one half of the lungs expanding with the inhaled air. The face becomes hot and flushed, of a deep red colour; or, in the worst instances, approaching to black, from the interruption to the circulation. Then it is that the head may become affected from the impure blood sent to the brain, and convulsions ensue. The medical attendant is called in and hears the history of the case. He is informed that the child has caught a bad cold, though the mother is frequently at a loss to tell how. If he has had experience in the maladies of children, he examines the mouth, and finds some of the larger teeth pushing against the gums. He lances the gums, and perhaps orders a warm bath, with some warm aromatic



aperient ; sees the child next day, and finds it quite well.

But, supposing that the practitioner is not familiarly acquainted with the diseases of children, and that he entertains an opinion that no great disturbance in the chest can exist without inflammatory action going on, what does he do ? He takes the nurse's or parent's account of the child ; and, judging from the difficulty of breathing, the cough, wheezing, and evident pain the child is in, and the great heat of the skin, he pronounces the child to have inflammation of the lungs. He orders directly two, three, four, or more leeches, to be applied to the chest, according to what he may suppose the strength of the child can bear ; a sharp purge is administered ; and fever medicines, with antimonial wine, is given every second, third, or fourth hour.—What state is this child in the following day ? If the difficulty of breathing has subsided, inflammation is pronounced to have ceased. The child looks pale and exhausted, and to prevent any return of the disease, the saline treatment is continued for a day or two. The following night the alarming symptoms return with increased violence, and the medical attendant is hastily sent for to witness a repetition of the child's sufferings. He is, perhaps, afraid to order more leeches, because he is convinced that the child can spare no more blood, and contents himself with

ordering a blister to the chest, after the child has been put into a warm bath. The fate of this child it is easy to foretell,—unless, indeed, it should happen to have a very vigorous constitution. It may recover from the apparent inflammation, but will long remain weakly and delicate ; and if any of the ordinary infantile diseases happen to attack it, and it should be carried off, it is said to die of measles, scarlet fever, hooping cough, or whatever the disease may be that finishes what erroneous treatment had begun.

In illustration of this fact I will relate a case. I was called on one afternoon to see a child ten months old. The servant, who was a country person, had spent four hours in searching for my residence. I repaired to the house immediately, and found the child tossing about on the nurse's lap, and two leeches hanging to its chest. The mother, being much alarmed at the state of the child, had, before my arrival, called in a surgeon living near to her. He pronounced the child to be suffering from inflammation of the chest, and ordered two leeches to be applied directly. Upon inquiry into the child's case I discovered that it had had scarcely any sleep for three nights, and that it had been very restless and feverish, with a hard, dry cough. On examining the mouth, I ascertained that there were several teeth pressing against the

gums. These I freely lanced; and though the child had been extremely restless before, it now immediately fell asleep, and continued so until twelve o'clock at night. When it awoke, all the feverish symptoms had subsided. The child, however, continued to be very pale and languid for several days, when the elder brother, a boy ten years old, was attacked with the measles. The infant was now exposed to the contagion of this disease, and took the complaint. The eruption never made its appearance in the manner it ought, although stimulants and the hot-bath, conjoined with warmth and rubefacients, were used unremittingly. It was, indeed, perceptible enough over the whole body, but instead of being of a deep red colour, it was of a brownish hue, showing the deficiency of red globules in the blood. This child died with all the usual appearances of exhaustion. Previous to its supposed attack of inflammation, it was one of the healthiest looking children I ever remember to have seen, and had never before suffered from illness.

Cases of this kind are not of rare occurrence; for the mistake in diagnosis is constantly being made. The apprehensions excited by the appearance of restlessness and pain, too frequently cause more to be done for the relief of the child than the case really demands. It may be that the practi-

tioner, knowing the danger of an attack of the same presumed kind in an adult, is desirous of checking the alarming disease in the infant with the utmost promptitude, forgetting the relative states of susceptibility, and that a source of irritation, which, to a child of five years old would be attended with no serious inconvenience, will in an infant give rise to a most alarming train of symptoms.

There is still much prejudice existing in the minds of many persons against lancing the gums of children. Some assert that it should never be resorted to; and give as their reason, that a hard cicatrix is formed over the teeth, which makes the difficulty of cutting them ultimately greater. Others, though admitting the practice, yet maintain that there is no occasion to lance the gums until the teeth are near the surface.

In answer to the first objection, daily experience declares the fallacy of it. The gums are of a spongy nature, very unlike muscular fibre, being soft, and plentifully supplied with blood-vessels; and however often it may be necessary to use the lancet, no increased hardness is to be discovered from its repeated application.

In reply to the second objection; the necessity and urgency for the operation are frequently as strong when the teeth are deep seated in the jaw, as when they are near the surface. The capsules

or cells, in which the teeth are enclosed, become congested, (the small vessels being distended with blood,) occasioning pressure on the delicate nerves which are in connexion with the teeth, and thus producing the most acute pain. The ready flow of blood, sometimes nearly black, after lancing, and the instantaneous relief afforded by it, demonstrate the value of the remedy.

I have never known any ill effects to arise from lancing the gums, but have seen numerous cases in which the most fatal consequences have ensued from neglect of this very safe and simple remedy. It is sometimes necessary to lance the gums, even when the points of the teeth appear through the surface. This is more particularly the case with the canine or eye-teeth. They usually have sharp points, becoming abruptly broad towards the base. They are cut later than the other front teeth, and generally with much more pain and difficulty, the spaces in which they are to appear being, not unfrequently, contracted by the teeth on each side of them.

I have known children suffer greatly for many days from this cause, without any suspicion being entertained by the parents that it proceeded from the teeth. One child, a little girl, suddenly lost the power of walking, every attempt being attended with a fall, though she had previously been strong upon her legs.

This lasted for three or four days, until the mother feeling alarm, called in medical aid, when lancing the gums speedily restored the use of the child's limbs. Neglect of this operation is frequently productive of the most serious results, such as squinting, convulsions, water on the brain, and various spasmodic affections.

Catching of the breath, and suppressed respiration, usually occur when the gums require lancing. In numerous instances the irritation of dentition causes the child to become pale and flabby, and sometimes to die suddenly, in consequence of respiration being stopped through spasm of the glottis. If the effects are not of so serious a character, they are still attended with much pain and suffering to infants. The digestion becomes impaired, the bowels deranged, the sleep is restless and unrefreshing, and the child peevish and fretful. Sometimes a harassing cough adds to the miseries of the little sufferer.

Enlargement of the sub-maxillary glands not unfrequently occurs during teething. These, if neglected, will sometimes suppurate; in other instances continue of a stony hardness. The most speedy remedy for dispersing the tumor, or causing the glands to assume their natural size, is to administer an emetic — from five to ten grains of ipecacuanha in powder. This to be repeated every

third day. Emetics exercise a most powerful influence in producing absorption, and increasing the action of the exhalents.

If the enlargement has been of long continuance, which is generally indicative of weakness of constitution, other means must be employed. The use of the iodide of potassium, externally, in the form of an ointment, will sometimes be of great benefit. It is not advisable to rub it over the gland, but around it; suppuration being likely to ensue if applied otherwise. A piece, the size of a small nut rubbed round the tumor for three or four minutes, night and morning, is sufficient.

At the same time the following mixture must be given.

R. Acidi sulphurici diluti, ℥v.

Syrup. papaveris, ʒi.

Infusi rosæ comp. ʒvij.

Fiat mistura.—The half to be taken twice a-day.

If there be any feverishness present, the addition of a few grains of the sulphate of magnesia will be beneficial, five to ten grains for a child of two years old. The preparation of iron likewise, conjoined with dilute sulphuric acid, as in the following formula, may be attended with advantage.

R. Ferri sulphatis, gr. i.

Acidi sulphur. diluti, ℥v.

Tinct. cardam. comp. ℥xx.

Infusi gentianæ comp. ʒj.

Fiat mistura.--The half to be taken twice a-day.

The same addition of the sulphate of magnesia may be made in this as the former prescription.

The diarrhœa which occurs during dentition, when it assumes a mild character, is unattended with danger in children of strong and robust constitution ; and if the disease be not allowed to go beyond a certain point, (which may be known by the child's losing flesh, and becoming pale,) it is often beneficial, nature thus endeavouring to remove the irritation consequent upon teething. In children, however, of delicate habit, whose face is pale, and flesh flabby, diarrhœa is a disease which must be watched with much caution, on account of the slow, but sure exhaustion accompanying it. When this disease has continued so long as to display its exhausting effects upon the constitution, convulsions, resulting from debility, are very likely to ensue. These convulsions are slight in the first instance, consisting chiefly of distortions of the features, screwing up of the mouth, winking and closing of the eyelids, and sometimes slight squinting. If the child should lose its appetite, the symptoms are speedily aggravated. The head feels hotter than natural, the abdomen also ; and the bowels are frequently distended with wind, sometimes to a very great degree. At this stage the child is usually very thirsty, and there is quickness of pulse with fever ; the tongue is dry, and the child frequently starts suddenly when in bed, or in



the nurse's arms. If these symptoms are allowed to continue, convulsions of a more violent character are apt to ensue,—the brain being insufficiently supplied with healthy blood.

I attended a child, eighteen months old, which had long been suffering from the debilitating effects of a neglected diarrhœa. The child was cutting the eye-teeth, and two double ones at the same time. There was considerable loss of flesh, fever, great thirst, and extreme restlessness. The child would have as many as six or seven motions daily. These motions were green and knotty. When I first saw it, it was lying with its head hanging over the nurse's lap, flat upon its back,—the only position that it would maintain. There were convulsive movements of the eyelids and muscles of the mouth; and the legs every now and then would be extended to their utmost length, and, with the toes, become quite rigid. The tongue was dry; and there was much thirst, the child seizing the cup with great eagerness whenever it was put to the lips. The back of the head felt hot to the hand, and the abdomen also, which was much distended and painful to the touch. The child had not taken any notice of surrounding objects for some days. The warm bath was ordered to be used twice a-day, and a dose of the following medicine administered every four hours.

R. Potassæ bi-carbonatis, ℥ss.  
 Succī limonis, ʒvj.  
 Spirit. æther. sulph. comp., ℥x.  
 Liquor. opii sedativi. (Battleii), ℥vj.  
 Syrup. croci, ʒiij.  
 Aq. distillatæ f ʒij.—Fiat mistura.

A dessert-spoonful to be given every four hours.

The child took this medicine regularly for three days; and the convulsive movements ceased. There was still, however, at the end of the third day, a good deal of fever; and the relaxation of the bowels continued, though not so violent; the abdomen was much swelled, and tender to the touch, causing the child to scream out occasionally. To alleviate those symptoms there was added to the mixture, gr. xx. of conf. arom., and five drops of the sp. æth. sulph. comp., with dill water instead of common water; and the following injection was administered at night: R Confect. rutæ ʒss; liquor. opii. sedativi. ℥vj.; decoct. hordei. ʒiv.: to be administered warm. This was done, and had the effect of giving the child four hours uninterrupted sleep. The following day, Oct. 12, the fever and thirst were abated, and the mouth was moist: the child was less querulous, and more conscious. The abdomen less painful and swelled. The child rested of its own accord on its right side in bed.—Oct. 13. Fever still abating; but the mouth dry, with thirst; tongue, unless kept moistened, like a piece of meat dried in the wind. Ordered calves-foot jelly (liquid)

combined with port wine, sugar, and isinglass ; and a dose of the following mixture three times a-day.

R. Confect. aromaticæ, ℥j.

Tinct. cinnamomi ℥xxx.

— cinchonæ ammon. ℥xxx.

Syrup. croci ʒiij.

Essent. anisi ℥iv.

Infus. cascarillæ ʒiv.—Fiat mistura.

The third part to be taken three times a-day.

The child has continued to take this mixture for three days, and is gradually gaining strength. For the first two days of taking it, slight nausea was occasionally displayed, but has now quite disappeared. The bowels are still much affected ; one day two motions, and another three or four ; still sour and green. She takes her food very well,—beef-tea, calves-foot jelly, and bread and milk ; and for ordinary drink, barley-water. The child is very thirsty during the night.—Oct. 17. The child is progressing rapidly towards recovery. The evacuations are less sour, and slightly yellow ; consciousness is more complete. The child is very cross.—Oct. 18. The motions have some degree of consistency, and are slightly tinged with brown. The belly, which has been excessively tender throughout the disease, is now much less so. The child has scarcely any flesh upon its bones, but is comparatively lively and observant of all that passes around her.—Oct. 25. At this period the child may be

considered quite well. Takes its food with relish, but at present is indisposed to try its legs. All that remains of the disease is the muscular debility consequent upon its severity.

I have frequently observed children during the process of teething fall away in flesh, losing their appetite and nightly rest, at which time they are usually feverish, and only then. During the day they are pale, and languid, and the flesh feels flabby; a diarrhœa generally attends, which does not yield to the usual carminatives, absorbents, and astringents. If this state is allowed to continue, the symptoms detailed in the above case will show themselves. Little difficulty, however, will be found in controlling this form of illness, if the following mode of treatment be adopted. *R.* Infus. rosæ comp. ℥ii.; acid. sulph. diluti. ℥v.; sy. papav. ʒi.; tinc. camph. comp. ℥xx.—The half to be taken twice a day. The child to have calves-foot jelly, to which are added isinglass and port wine. The scarification of the gums must by no means be neglected.

In children of weakly constitution, with large heads, and large and prominent eyes, it is generally found that the brain is flaccid. They are backward and slow in cutting their teeth; are long before they walk, and tardy in learning to speak. The physical as well as the mental powers are slowly developed, and are late in attaining to anything like vigour.

It sometimes happens that such children, after the ordinary ailments of infancy, are slow in recovering their usual state of health: and not unfrequently disease of a dangerous character insidiously assails them. Water is gradually effused from the exhalent vessels into the ventricles of the brain; and the first striking evidence of this is in the child being seized with convulsions.

The premonitory symptoms, warning us of the approach of this state are the following. The child is usually cross and wayward in its disposition, preferring to lie still, and not be spoken to; the face is pale: the tongue usually yellow at the base; and whitish at the tip; the lower lip is dry and chapped, and the child is constantly picking it; the appetite is sometimes voracious, at others no inducement will persuade the child to eat. The bowels are generally regular in their action; the motions not of a bad colour, but extremely fœtid. Sometimes the child will become suddenly cheerful, and play with its companions, and seem as if little ailed it, lulling all suspicion that it is suffering from anything but debility, consequent upon the previous disease; mostly, however, its eyes will look heavy, giving it the appearance of an adult who is suffering from headache.

When the convulsions set in, it is usually in the night, suddenly; and they are strong in proportion to the weakness of the child. In children

which display such a tendency, the great object is *to prevent* the attack of convulsions; and to effect this, fortunately, is much in our power.

A mild mercurial alterative should be given every second night, succeeded by a teaspoonful of castor-oil the following morning, until the motions lose their extreme fœtor, the lips their dryness, the tongue its foulness, and the breath its bad odour. Tonic medicines should be given during the day, combined with aromatics, and slight stimulants, to overcome the languor of the circulation that usually prevails. The child must not on any account be purged. The diet should be generous, and not given at too long intervals. Asses' milk, if it can be obtained, is admirably adapted to this state.

This disease,—convulsions proceeding from a watery effusion on the brain,—has received the name of “*water stroke*,” from the apparent suddenness of its attack. The term *stroke* is, however, objectionable, as it is likely to have the effect of withdrawing our attention from the true nature of the disease, which in reality is slow in its progress, and of inducing a neglect of its insidious premonitory symptoms. A better name would be “*ventricular dropsy*,” as the ventricles are invariably found to be distended with water. It has always appeared to me, that when the distensions have arrived at their acmé, convulsions, attended with stupor have supervened.

Children will bear comparatively large doses of laudanum when suffering from the irritation of teething attended with diarrhœa. The constant discharge of fluid from the body appears to lessen the tendency which the brain usually displays to oppression, from the use of this medicine. As much as two drops of laudanum may be given every third or fourth hour to a child eighteen months old, to allay the irritation, when it assumes this form. I have repeatedly prescribed this quantity for a child from one year and a half to two years old, with advantage. More caution, however, is required in regulating the dose for a child, of the same age, who is suffering from irritation during dentition, unattended with a purging. Under these circumstances one half of the former dose, viz. one drop every third or fourth hour, will generally be sufficient, and it is necessary at the same time to pay great attention to the state of the bowels, and to keep them freely open. The alvine secretions are invariably much depraved in this form of disease, and their detention in the bowels proves a considerable addition to the already existing causes of irritation.

Counter-irritation is a valuable addition to our resources in certain states of the brain when a child is suffering from painful dentition. The great importance of lancing the gums has already been noticed; and this should be performed whenever the gums appear red, swelled, and hot, or the

child is observed to apply its fingers to them. In addition to this most important remedy, blisters behind the ears will often prove of great service in relieving the brain from irritation and pain, especially when the child is in a state of semi-consciousness, apparently asleep, but with its eyes only half closed; and when roused not appearing to notice the faces with which it is familiar.

Sponging the forehead, jaws, and throat, with cold water by means of a sponge, from which the water has been wrung, will also give relief.

This state is usually found in what may be called the second stage of the disorder, after the excitement of the violent fever has terminated, and exhaustion to a greater or less degree supervened.

Blisters are improper during the excitement of fever, when the skin is hot, as they increase the amount of irritation.

Children in whom so great an amount of irritation from teething exists, as to warrant recourse being had to the above-mentioned remedies are occasionally observed to suffer from a sudden gasping for breath, followed by an attempt to vomit, though without throwing anything from the stomach. This appears to arise from the presence of wind in the stomach which is most commonly empty, from the disinclination the child manifests to take food.

It is a symptom unattended with danger, though frequently one of great distress to the child, and



painful to witness. Relief may speedily be afforded by the use of laudanum, in the manner advised above; or by half a drop, for a dose, of dilute hydrocyanic acid, in syrup and water, every three or four hours.

The benefit of pure cool air, when children are cutting their teeth, has previously been pointed out; but this is more especially to be attended to when fever occurs as the result of irritation from dentition. The room in which a child lies cannot be too well ventilated; the freer the circulation of air around the bed the better; it is advisable to dispense with bed-curtains, and the bed-clothes should be as light as is consistent with only moderate warmth.

Sometimes, after the most urgent symptoms connected with this form of attack have been subdued, and when the child looks pale, and the skin feels cool, it is judged prudent by the nurse or mother to increase the heat of the room, from an opinion that increased warmth will prove grateful to the child. I have occasionally seen much mischief result from this being done, and a return of the more alarming symptoms which had only recently subsided. In such cases the child will become flushed on one cheek; and display great restlessness; the respiration be hurried and panting; the alæ of the nose moving with each inspiration and expiration; the carotid arteries pulsating strongly.

All these symptoms, however, will, generally, be instantly alleviated, and shortly disappear, if the child be removed into a cool atmosphere, or into a room without a fire.

It is often difficult to determine when it is proper to administer purgative medicine to a child after it has passed through the more alarming stages of this disease. The colour of the evacuations will not always be a sufficient guide on this point ; for they often appear of a healthy colour, when the child seems to waste, continues to lose strength, and expresses great disinclination to food.

There is, however, one indication which I consider of much value in enabling us to decide when it is necessary to give mild medicine to stimulate the stomach and bowels in this state,—and that is the internal appearance of the mouth. Though the tongue may appear clean, yet the cavity of the mouth, when the lips are distended, will look as if the child had been sucking gum ; the saliva appearing adhesive and thick. In this case mild aperients, as rhubarb and magnesia, are to be administered ; and the child will, when the medicine has operated, be more disposed to take food.

It is of importance to enable the child to recover as soon as possible from the debility consequent upon an attack of this kind ; and I know of no medicine so beneficial in promoting this end as the sulph. acid. dil., given in small doses twice a day, when the tongue is clean.

Change of air is always beneficial to children after illness; but, unfortunately, irritation from teething usually occurs with the greatest severity in the winter and spring months, when less advantage is to be gained from adopting it—unless the sea-side be chosen. The diminished perspiration at those seasons, and the want of open-air exercise, with damp, &c., appear to predispose to irritation during the process of teething.

## CHAPTER IV.

## BRONCHITIS, AND INFLAMMATION OF THE LUNGS.

WHEN any violent interruption to the healthy breathing occurs in a child, from the influence of cold, teething, or other causes, it is too frequently concluded that the change is either produced by inflammation, or that inflammation will ultimately supervene. If a child has a hard dry cough, with difficulty of respiration, a flushed face and fever, "inflammation of the chest" is said to have taken place. This, with many practitioners, is the common term by which every disease attended with those symptoms is designated.

Nothing can be more vague and unsatisfactory in explaining the true nature of the affection than this term, or more likely to mislead all parties concerned in the welfare of the child.

The chest is the cavity in which the heart and

lungs, with their investing membranes, are enclosed. When either of these internal structures or their investing membranes are inflamed in the adult, the disease produced thereby is distinguished by a specific name, as bronchitis, or inflammation of the bronchi ; pneumonia, or inflammation of the lungs ; pleuritis, or inflammation of the pleura ; &c. &c. This precision in diagnosis is not sufficiently attended to in infants ; the symptoms during life, and appearances discovered after death, vary so much from those witnessed and found in adults, that doubts and uncertainty occupy the mind of the medical practitioner, and render his treatment too frequently erroneous, from the belief that he may entertain that he is treating a disease which has a parallel in the adult constitution, and that the symptoms witnessed in the infant are indicative of a corresponding affection with that which they point out in the adult. One powerful means for detection of disease in the chest of the adult, percussion, is generally allowed to be almost useless when applied to the infant, excepting in the latter stage of what is termed inflammation of the lungs, when hepatization has occurred ; and as auscultation is equally inefficient, the infant is thus deprived of all the benefit which those two means of diagnosis afford, in throwing light upon the exact nature and seat of the malady, when it occurs in persons of more mature age.

In the inflammatory affections of the lungs of adults, it is common to observe rusty or brownish sputa coughed up; and blood is sometimes discharged. These appearances are not perceived in the child: when the expectoration of a child has been examined, it will be found to consist entirely of mucus or phlegm; and the more viscid and stringy this is, the greater peril the child is in. In the latter stage of the disease the mucus is found to be yellow.

There is also a very obvious difference between the short catching breathing during genuine inflammation in adults, and the short breathing during what is called inflammation in infants. In the adult the effect of inflammation is shown by the convulsive starting of every muscle of the body upon taking a deep inspiration, and a brief groan usually attends the act. In the infant, on the contrary, the breathing is hurried and quick, and more like the panting of an animal from over fatigue. The adult endeavours to preserve the most perfect quiet for fear of inducing the pain, and to steady the breathing; whilst the child is continually tossing itself about, and changing its posture.

The sensation communicated to the hand by touching the skin of an adult suffering from active inflammation of the lungs or pleura, is that of great heat. This, however, is not perceived in the infant supposed to be suffering from the same disorder.

The skin is generally, excepting for the first few hours, moist; and, during the day time, but little raised above the healthy standard; through the night, however, the fever and heat are usually greater.

The discrepancies existing as to the true character of inflammation, when the lungs are considered to be affected by it, are very great. Dr. Billard, who appears to have had ample opportunities for studying the diseases of children and their post-mortem appearances, says, in his work *On the Diseases of Infants*, “It is generally allowed that the lungs become the seat of considerable *congestions*, producing the most serious consequences. The anatomical characters of these congestions vary from a simple sanguineous infiltration to a complete pulmonary engorgement. It is also admitted that it is difficult sometimes to draw the line between the effect of a congestion, and that produced by an inflammation in the pulmonary tissue.”\*

This admission of uncertainty in diagnosis between inflammation and congestion deserves the most serious consideration, for upon this point hangs the whole treatment—whether the disease is to be subdued by bleeding and leeches; or by other means of a different kind, adapted for the removal of the congestive state.

\* A Treatise on the Diseases of Infants, by M. Billard, Docteur en Médecine de la Faculté de Paris, translated by James Stewart, M.D.

To proceed with the subject as it appears in the work of M. Billard: he says, "Pneumonia, or inflammation of the lungs of infants, exhibits peculiar characters in which it differs from the same affection in adults. Instead of being an idiopathic affection, arising from irritation developed in the pulmonary tissue, under the influence of atmospheric causes, which often excite the disease, the *pneumonia of young infants is evidently the result of a stagnation of blood in their lungs.*—Under these circumstances, this blood may be regarded as a foreign body, and it concurs in producing an alteration in the pulmonary tissue with which it combines, and is identified with it so as to produce what is called hepatization of the lungs. In proof of this, it is known that pneumonia almost always follows congestion or engorgement of the lungs, and as this engorgement is more frequent in the right lung than in the left, and at the posterior border of the lungs than in any other part of the organ, pneumonia appears much more frequently in the right than left lung; at least it is so with respect to the children I have examined at the Hospice des Enfants Trouvés, who are always placed at rest on the right side. It would therefore appear that inflammation of the lungs, which produces hepatization, arises, in infants, in general from some mechanical or physical cause, whilst this is not the case in adults; besides, the inflammation of the



lungs is ordinarily very circumscribed, and is found almost always confined to a point primarily engorged; and the pleura, which in the greatest number of instances is inflamed at the same time with the lungs, at a more advanced age, is not affected in young infants."

The treatment advised by M. Billard for subduing pneumonia and pulmonary congestion, consists in ordering "two, four, or six leeches, according to the strength of the child, and that it should be kept from the breast for twenty-four or twenty eight hours."

These views of the nature of the disease and of its treatment, are generally adopted in this country; but I do not hesitate to declare that the great mortality of young children, from this particular affection, arises chiefly from the attempts made to subdue the disease by the abstraction of blood. The post-mortem appearances which usually present themselves when a child has died from inflammation of the lungs or bronchi, consist, as has already been stated, in a hepatized state of the lung, and more or less effusion. The opinion entertained by M. Billard of the exciting cause of the disease, is that "the pneumonia of infants is the result of a stagnation of blood in their lungs," and "that this blood must be regarded as a foreign body." That such is the fact cannot be denied; and it should always be remembered that frequently as this dis-

ease is found to occur, it never arises suddenly. There are invariably the premonitory symptoms of catarrh existing more or less severe for two, three, or more days previously; but these symptoms are thought lightly of by the parents, and the child is considered to have "only a cold;" and it is not until a difficulty of breathing is manifested that relief is sought for from the medical practitioner. Up to this time the child has probably been much harassed by a cough, either exciting the lungs by its violence, or producing almost constant irritation from its frequency, and further exhausting the child by disturbing its sleep. The power of the heart is now diminished, and the propulsive force of the blood through the lungs much lessened. The bronchial secretion, which, at the commencement of the catarrh, was freely discharged into the mouth and swallowed, is now, from the exhaustion occasioned by the continuance of the disease, wholly or partially retained within those tubes, and a rattling is heard, even at some distance from the infant, when the breath is drawn in or exhaled. The accumulation of this secretion constitutes the mechanical obstruction to the breathing; and the bronchial passages being choked up by it, the free circulation of the blood through the lungs is not only impeded, but its perfect oxygenation is also prevented.

The blood now becomes stagnant in the lungs; the face assumes a purple hue, the respiration is

hurried and panting, the heart beats vehemently though powerlessly, and the child appears in imminent danger of suffocation. When the disease has arrived at this point, it is termed congestion by some, and inflammation by others. The same treatment, however, is generally adopted for both, and the common practice is to take away blood, with the view of relieving the engorged lungs.

Though in this state, it is unquestionably a mechanical obstruction to respiration which we have to subdue, and the paramount object is, to do something to enable the child to breathe, yet the question is, would the abstraction of blood facilitate this end? Would not the child, in its already exhausted condition, be still more weakened if leeches were applied? and, taking into account the mechanical causes occasioning the obstructed respiration, would not such a remedy, although it might seem to afford a temporary relief, be likely, by weakening the child, to give strength to the disease? I answer, confidently, it would. I have seen repeatedly the most marked and fatal prostration of strength occur from adopting this practice. All that I have ever known to be gained by the use of leeches or blood-letting, when applied for the removal of those symptoms, was, in some instances, an apparent relief, but in reality a diminished sensibility consequent on the abstraction of blood from a previously exhausted system; in other in-

stances, there would be a sudden change in the countenance of the child; the purple hue would vanish, excepting from the commissures of the mouth and alæ of the nose, a deathlike paleness would succeed, the skin become cold and clammy, and the respiration more hurried.

The symptoms which precede an attack of what is usually called inflammation of the lungs, in an infant, are, according to my experience, the same that are found to exist in bronchitis, viz. difficulty of breathing, harassing cough, and increased secretion of mucus in the bronchial tubes; flushed face and fever. These symptoms I have always regarded as constituting the first stage of pneumonia, as it is termed; and, after they have existed for a longer or shorter period uncontrolled by medicine, and have experienced aggravation, the lungs themselves, from *mechanical* causes, previously explained, become impeded in their functions, and the disease resulting is pronounced to be inflammation of the lungs.

In the treatment of this affection in the first stage, when bronchial irritation alone exists, and before the lungs have become positively affected, the more simple and soothing the plan adopted, the more speedily will the child recover. If the bronchi appear oppressed, or loaded with mucus, the readiest way to relieve them is to administer an emetic: if the child be weakly, it should consist of ipe-

cacuanha alone; if robust, it may be combined with tartar emetic. The administration, however, of tartar emetic requires great caution, as many children have been known to die from the use of it. When any bad symptoms arise from giving it, as great paleness, with faintness, sighing, &c., the following draught should immediately be given, and it will seldom fail in restoring the powers of the circulation. R. Spirit. ammon. arom. ℥x. ; Sy. croci ʒi. ; Aquæ ʒij. : to be taken immediately, and repeated if requisite.

The beneficial influence of emetics in those diseases is manifold. The air-passages are relieved from the mucus which occasions a mechanical obstruction to the breathing, and thus purification of the blood is promoted. The skin is also acted upon, to the relief of the internal vital organs. The necessity for purging (which is always a great point in affections of the respiratory organs in infants) is also frequently obviated, in consequence of the copious flow of bile occasioned by the straining of vomiting, which not only stimulates the bowels but lessens the engorgement of the liver—which is generally found to prevail when any interruption takes place in the natural state of breathing—and thus gives a general freedom to the circulation of the blood throughout the whole body.

If there be much difficulty in breathing, with heat of skin, the child should be put into a warm

bath of 96°, every night, and remain in ten minutes. The best mode is to wrap the child in a small blanket, and so to immerse it, blanket and all; by adopting this simple method, the whole body will be excluded from the air, and if the child, from struggling, is not wholly in the water, the steam arising from it will be equally beneficial. When taken out, the body should be well dried before a fire, and warm, but not heavy, clothing applied. The temperature of the room should be kept at 60°

The chest and sides should be rubbed for ten minutes, night and morning, with the following stimulating liniment, taking care to apply some intervening substance as a screen, between the chin and chest of the child, to prevent the vapour irritating the lungs. If the difficulty of breathing be very considerable, some of the liniment should be poured upon folded flannel and applied to the chest, after the friction is done, and be allowed to remain there. R. Liniment. camph. c. ʒj. ; Tinct. cantharid. ʒij. ; Spirit. camph. ʒvi. : fiat linimentum.

If the child is weakly, the febrifuge should consist of liquor am. acet., in combination with vin. ipecac., sy. papav., and tinct. opii camph., thus:—Liquor. ammoniæ acet. ʒiv. ; Sy. papav. ʒij. ; Vini ipecac. ℥xx. ad xxx. ; Tinct. camph. comp. ʒj. ; Mist. amygdalæ ʒv. : fiat mistura. The fourth part to be taken every four hours.

If the child be robust, and circulation vigorous,

a saline mixture composed as follows may be given ;  
*R.* Potassæ bi-carb. ʒss. ; Succî limonis ʒvj. ; [vel  
 acid. citrici gr. xxvi ;] Vin. ant. tart. ℥xx. ; Syrup.  
 papaveris ʒij. ; Tinct. camph. comp. ʒj. ; Mist.  
 amygdalæ ʒvij. : Fiat mistura. A fourth part every  
 four hours.

To allay the irritating cough which usually prevails when this disease exists, a teaspoonful of the following mixture may be given to a child six months old, during the intervals of the other medicine. (The above prescriptions are adapted to children of that age.) *R.* Vin. ant. tart. ʒi. ; Oxy. scillæ ʒij. ; Tinct. camph. comp. ʒijss. ; Sy. papav. ʒiv. ; Aq. ʒv. : Fiant guttæ.

It will most probably be necessary, when the child has been ill for two or three days, to give a dose of aperient medicine, as medicines of a sedative character have a tendency to diminish the various secretions—more especially of bile. It will be advisable then to give, if the tongue appears foul and the breath smells feverish, a small dose of calomel, in conjunction with jalap, to a strong child, or with rhubarb to one that is weakly : two grains of calomel to six of jalap or rhubarb. Five or six grains of compound powder of scammony with calomel, when it can be procured genuine, (frequently a difficult matter,) act usually with great certainty, and no distressing effects follow.

When the irritation of an attack of bronchitis

has continued for some days unchecked, an alarming train of symptoms frequently ensues. The face suddenly becomes of a purple hue; the breathing short and laboured; the alæ of the nose expand and contract; the skin is cold and clammy to the touch; the pulse is rapid and weak, and the air-passages seem choked up with mucus. An aggravation now has taken place of all the symptoms attending the original attack of bronchitis, and the lungs participate in the obstruction to the free ingress and egress of air. We must not forget, however, that before all this takes place, the system has been gradually sinking from the joint influence of the exhausting nature of the cough, and the want of rest, which the child has suffered. Although it is a painful and alarming sight to see a child suffer from this distressing train of symptoms, our fears ought not to be allowed to obtain the mastery over our judgment, and to prompt us to employ an energetic system of treatment which may only hasten the fatal catastrophe. We should reason with coolness upon the gradual accession of these now alarming symptoms, tracing the origin of the attack, and not be blinded to the true nature of them. These symptoms, as has been before mentioned, are not indicative of inflammation, although too frequently believed to be so, but are the result of congestion, occasioned by obstructed respiration, and a corresponding debility through-



out the system. Though *blood-letting* is frequently resorted to for the removal of this imminent state of danger, yet I again assert that it is *not the proper remedy*. The first step taken should be to unload the lungs of the encumbering mucus by means of an emetic ; and when this point has been gained, the child should be placed in a warm bath, and stimulants administered. The moment the child is sick, a paleness succeeds to the dark purple hue previously witnessed, and the most complete state of exhaustion follows. The draught with spirit. ammon. aromat. and syrup. croci, recommended at page 85, is as good as any, and it ought to be given at the interval of every hour or second hour, or at longer intervals, according to the state of the child. When the equability of the circulation is once restored,—which may be greatly promoted by the use of the stimulating liniment to the chest, sides, and back,—the child will become much easier, and the more alarming symptoms subside. The danger, however, is far from being over, and the most diligent attention is necessary to prevent a return of the previous distressing symptoms. It is sometimes very difficult to make a child swallow when it is in this state ; but however reluctant it may be, it must take the medicine. If the emetic does not act with sufficient quickness, the finger or a feather must be introduced into the throat, and the fauces irritated, to hasten the vomiting, for upon this the child's life depends. The

child should not be allowed to recline upon its back;—in the obstructed state of the circulation, the blood will gravitate at the base of the lungs, and increase the oppression. When it begins to vomit, it is best to hold it in the arms, supporting it by the abdomen and under the arms, with the face towards the ground. This will allow of the freer action of the muscles of respiration, and assist the act of vomiting.

When reaction has taken place, the perturbed action of the heart must be restrained by the use of sedative and nauseating medicines. Much the same treatment must be adopted in this state of the child, as is advised in bronchitis.

It has been recommended that the child should be kept from the breast for twenty-four or twenty-eight hours. To such a course, however, I am decidedly opposed. The child should be allowed to have the breast whenever it has a desire for it. The presence of milk in the stomach facilitates the action of vomiting; and as the medicines most successful in subduing the disease are emetics, it is of the greatest consequence that a child should have this operation made as easy as possible.

In children, to whom leeches had been applied for the cure of bronchitis, I have frequently known all the above symptoms,—usually considered as appertaining more particularly to the lungs,—manifest themselves shortly after. It is not difficult to

conceive how this should happen. The power of the circulation being much reduced by the loss of blood, and the natural expulsive action for throwing off the mucus contained in the bronchial tubes being diminished, mechanical oppression is in consequence speedily induced, and comes on in even a shorter time than it usually does on the continuance of the symptoms, when no remedies have been tried to afford relief.

After one of these attacks of oppression of the lungs, the restoration to their healthy functions does not take place at once. It is frequently observed that the breathing remains for some time in a very uncertain state; a trifling cause will produce a return of excitement, more or less severe, according to the debility occasioned by the first attack. The diligent and persevering use of the liniment once, twice, or even three times a day will, however, usually remedy this weak state of the respiration, which is, in many instances, spasmodic.

If no good effects should attend the use of the liniment; and it should appear, on attentive examination, that some portion of the lung has not recovered its natural state, a small blister applied over the region will produce a beneficial effect. The blister should not be allowed to remain on more than four hours. The severity of the vesication is best prevented by putting a piece of tissue paper over the blister.

Blisters should never be applied when the skin is heated by fever. The excitement and pain produced by vesication augment, in such a state, the already great irritative state of the system. They should only be regarded as powerful stimulants to assist the languid circulation of the blood in a particular organ ; but many practitioners, overlooking their utility in the latter case, have abandoned the use of them entirely, through fear of inducing gangrene, &c., from the uncertain extent to which the vesicating effects may proceed. The more plentifully the capillary vessels of the skin are supplied with blood, from the circulation being accelerated by fever, the greater is the effect produced by the application of a blister. Whilst on this subject, it may be as well to mention the remedy which I have found most effectual in healing the sloughed surface of the skin, which has been too much excited by a blister. A lotion, composed of one dram of liq. plumb. di-acetat.—Goulard's extract—to one dram of laudanum, and six ounces of distilled water, mixed with crumbs of bread, previously scalded, to make a poultice, will give almost instant relief. To prevent the irritation and pain, usually occasioned by the removal of the poultice, some fresh lotion should, from time to time, be poured through the linen which contains the poultice,—the fluid will be rapidly absorbed, and thus the necessity for applying another for twelve hours will be prevented.

When the severity and danger of an attack of congestion of the lungs have passed away, it is not at all uncommon for the child to suffer for a longer or shorter period from the results of the violent irritation those organs have experienced. Œdema will sometimes be found to exist, having evidently arisen from the violence of the disease, and consequent distension of the air-cells; fluid infiltrates, and they become enlarged sometimes to so great an extent, as to occasion considerable projection of the ribs.

In such circumstances, the heart is frequently pushed from its proper place, and its beating may sometimes be observed in the middle of the chest, and even further to the right. It is fortunate that this organic displacement does not occur in very young infants. Children of three or four years of age, in whom congestion has occurred during the course of scarlet fever and measles, most frequently present œdema. Chronic bronchitis is the most common sequela of an attack of congestion; there is no danger when this occurs, provided proper attention is paid to the little patient. Watchfulness, as to the increase of irritation from increased severity of cough and cold, is to be strictly enjoined. In scrofulous children, or those who have been subjected in their ailments to severe treatment comprising blood-letting, leeches, &c., and other modes of depletion, it is not uncommon, on account

of the deterioration the blood has experienced, to notice enlargement of the glands of the throat and neck. This is evidently the result of debility.

In the treatment of œdema of the lungs, the lighter the nourishment the child is allowed to take, the better. If it be not at the breast, and it rarely is when this occurs, asses' milk is the best food; a pint and a half during the day may be taken by a child four years old.

The spasmodic difficulty of breathing, rapidity of pulse, fever, restlessness, and violent cough, which frequently occur during the protracted convalescence of the child, must be combated by medicines of a febrifuge and soothing character. The stomach, also, is frequently found to suffer from the irritating effects of the cough and general impairment of the constitution. Flatulence is a frequent symptom of this disordered state of the stomach; and it will frequently be found to be the exciting cause of difficulty of breathing, from the distention of the stomach and bowels impeding the free movement of the heart and lungs.

As, in this state, the bowels are generally deranged, a powder composed of Scam. cum cal. gr. vj., with one of compound cinnamon powder should be given; and if there is fever, with the symptoms detailed above, a dose of the following medicine, should be given every four or six hours until the symptoms have subsided. R. Tinct. digi-

tal<sup>is</sup>  $\mathfrak{mij}$ .; Spt. æth. sulph. comp.  $\mathfrak{mij}$ ; Tinct. opii  $\mathfrak{mi}$ .; Sy. croci  $\mathfrak{zss}$ .; Aq.  $\mathfrak{zss}$ .; Potassæ bi-carb. grs. v.; Succ<sup>i</sup> limon.  $\mathfrak{zi}$ .: Fiat haustus. The chest should be rubbed with the stimulating liniment night and morning; but if the vapour produces an increase of cough, the following may be substituted:—R. Ol. camphoræ  $\mathfrak{ziss}$ .; Tinct. cantharid.  $\mathfrak{ziv}$ .: Ft. linimentum.

When the active symptoms have subsided, tonics and sedatives must be perseveringly administered. The form of medicine most adapted to the case, I have found to be the following:—R. Pulv. alumin. siccati gr. iv. ad. viij.; Tinct. opii camph.  $\mathfrak{Oij}$ .; Acid<sup>i</sup> sulph. dil.  $\mathfrak{mv}$ .; Sy. papav.  $\mathfrak{zi}$ .; Inf. rosæ  $\mathfrak{zi}$ .: Fiat mist. Half twice a day.—Flannel should be worn next the skin; the side enlarged should be frequently rubbed; change of air in summer weather is advisable; and confinement to one apartment in the winter and spring.

In the treatment of chronic bronchitis, the twofold object is, or ought to be, to allay the irritation of the cough, and to support the general strength of the system. This may be effected by giving the following medicine, or varying it according to circumstances. R. Inf. rosæ  $\mathfrak{zi}$ .; Sy. papav.  $\mathfrak{zi}$ .; Acid. sulph. dil.  $\mathfrak{mv}$ .: half twice a day. Or, R. Inf. gent comp.  $\mathfrak{zi}$ .; Ext. conii gr. i.—ij.; Acid. sulph. dil.  $\mathfrak{mv}$ .; Sy. papav.  $\mathfrak{zi}$ .; Ferri sulph. gr. ss. ad gr. i.: Half twice a day for a child a year old. The diet should be light, yet nutritious; and flannel worn

next the skin. To children in whom debility is found to exist, the above medicines may be given without the sedatives, if there be little or no cough, excepting in the first prescription, where the *Sy. papav.* always appears to prevent the griping tendency of the dilute sulphuric acid.

Since the preceding observations were written, I have learnt that Dr. Bow, of Alnwick, has succeeded in subduing bronchitis in its acute form, simply by an opiate liniment applied to the chest, without having recourse to blood-letting or any other of the more active remedies generally prescribed. Dr. Bow's successful treatment is another proof that this disease is to be considered as proceeding from irritation, and not from inflammation.



## CHAPTER V.

## HOOPING-COUGH.

“HOOPING-COUGH,” says Dr. Mason Good, “derives its name from the convulsive sound which accompanies the fit.—The name of *kin-cough*, by which it is distinguished in the north, and which should rather be written *kind-cough*, is derived from the Saxon or German word, *kind*, ‘a child,’ as being peculiarly common to this age.” It may here be observed that Dr. Good is wrong in his derivation of *kin-cough* from the German, *kind*, a child. In the word *kin-cough*, *kin* is merely an abbreviation of *kink*, the final *k* being elided in consequence of the following word, *cough*, beginning with a letter of the same power. The primary meaning of *kink* is a *twist*,—*contortio*; and in an analogical sense it is synonymous with the Latin term *convulsio*. In Northumberland, the short, hard *turns* which a new rope is apt to run into, especially on being wet, are termed *kinks*; and, in

the same county, "to be like to go into a *kink* with laughing," is a common expression.

Hooping-cough is one of the diseases of infancy which is most trying to the constitution of delicate children, and even those of robust frame frequently suffer severely from its effects. Though it sometimes occurs in a mild form, and may affect but slightly the general system of the child, yet still in this respect much depends upon the state of the atmosphere and period of the year.

When the disease makes its appearance at the latter end of autumn, the middle or beginning of winter, or the early part of spring, it generally proves most trying in its effects. When it occurs towards the end of spring, the disease generally runs its course with comparative mildness. The benign influence of mild weather, free from moisture, invariably ensures a modified state of suffering. The cough is aggravated by easterly or north-easterly winds; by sudden changes in the temperature; imprudence in diet, or whatever has a tendency to disturb the digestive functions.

Adults are liable to this disease; and I have seen many cases wherein they have experienced much distress; but in them this state is never one of alarm, provided the circulatory and respiratory organs are free from disease. Their greater strength and ability to free the lungs from the secreted mucus contribute to lessen the severity of the cough; and

the blackness of face, so commonly witnessed in infants is seldom observed in adults. It has been said to be a disease that occurs but once. I am, however, acquainted with a lady who has had it three times ; and there are, no doubt, many other cases of a similar kind which form the exceptions to the rule.

Many medical men of great authority consider the hooping-cough to be contagious ; and, from my own experience, I am inclined to think that this opinion is correct. As evidence of its contagious character, the fact of several children of the same family being attacked by the disease, nearly at the same time, is usually alleged ; but those who are opposed to the opinion of its being contagious deny the justness of the conclusion that is drawn from this admitted fact ; for, according to their view of the subject, the change of temperature, or any other cause, that might have produced it in the first case, might with equal probability have produced it in the others. Having thus fairly stated the question, I shall not attempt to solve it by any arguments, but content myself with merely stating that two cases in particular, which came under my observation, of adults taking the disease, appeared to me to be strikingly corroborative of the opinion of its being contagious : in the first, the father appeared to have caught the disease from his own child ; and this gentleman seemed to have communicated it again to a companion during a journey on a railway.

This disease is undoubtedly spasmodic in its nature; and it is highly important to bear this in mind, as the symptoms, when greatly aggravated, sometimes bear a strong resemblance to those characteristic of inflammation. It is a common opinion, that the exaltation of symptoms, dependent for their origin upon irritation, may lead to inflammation. To this doctrine, however, I cannot assent; and my impression is, that the mode of treatment founded on it is one of the causes of the great mortality found to prevail in so many of the diseases peculiar to infancy, and in none more so than in hooping-cough. It is not difficult to conceive the effect which violent and continued coughing must ultimately produce in a child, who, perhaps, scarcely keeps a meal upon its stomach during the day. The various functions of the brain, lungs, and heart, will be so deranged, that enervation must inevitably ensue, and all the different symptoms peculiar to this state of the system show themselves,—and these symptoms, though really proceeding from irritation, are but too frequently considered to be inflammatory.

When children have been suffering from interruption to the circulation of the blood through the brain,—displaying all the symptoms of congestion of that organ, flushed face, brightness of the eyes, giddiness, &c.,—and when it has been deemed necessary to abstract blood without delay, I have

repeatedly seen them recover from these alarming symptoms by administering a few doses of hydrocyanic acid. I have also seen the lungs, when powerfully affected, as easily tranquillised by the same remedy. It is in this disease, as in others of violent kinds, that the attention should be strongly directed to soothing the nervous system, and moderating the action of the heart and lungs.

The commencement of hooping-cough is frequently very insidious. The usual symptoms of a catarrh or common cold show themselves, and more or less fever obtains; cough sometimes moderate, at others distressing. Children will frequently suffer from this disease for some time before it is known to be the hooping-cough. The distinctive sign or character which is usually looked for, a hoop, or whoop, may not occur but once or twice during the whole course of the complaint, and much valuable time may be lost before the appropriate remedies are administered to control the disease. The weakness of the lungs, consequent on the injury occasioned to their delicate structure by almost incessant coughing, is frequently of long duration. A wheezing, and difficulty of breathing, with sometimes a catch, and frequent sighing, are amongst the sequelæ of a less serious character that are observed on the abatement of the complaint.

In no disease of infancy is the caution to be observed of abstracting blood more necessary. It

too frequently happens, that when an infant of a few months old manifests the symptoms enumerated above, the medical practitioner, apprehending an attack of inflammation, adopts the routine of remedies generally acknowledged to be appropriate in such attacks, the chief of those remedies being the abstraction of blood by leeches. Such treatment will generally prove fatal to the child; for the diminished muscular and nervous power, resulting from the debilitating influence of loss of blood, will render it less able to resist the force of the disease. The cough and fever may appear lessened; but this apparent relief will arise from want of power to cough, and from the decline of vital energy. The result is, that the air-passages will become clogged with mucus; and unless the child has strength sufficient to vomit, suffocation will take place.

It is of the greatest importance, therefore, to be guarded in the adoption of remedies when called in to a child who appears suffering from what is usually termed "a very bad cough," with fever, which constitutes the first stage of this disease. In such a case, it is necessary for the medical attendant to hear the child cough in order that he may be enabled to judge of its character; and should it not, during his visit, cough from the irritation of the disease, the cough may be excited by gently pressing the trachea with the finger and thumb. The

cough in this disease is usually more sonorous and suffocating than that attendant on common catarrh, and there is more suffusion of the eyes during and after the fit than is observed in that complaint. Vomiting after taking the breast, or other food, is also of more frequent occurrence.

Children who have recently recovered from the measles and scarlet fever, appear to be then more susceptible to the contagious influence of the hooping-cough, on account of the diminution of their strength and nervous energy. It is advisable, in the event of this disease occurring to a member of a family, to instantly withdraw any child who may be still suffering from the debility consequent upon measles or scarlet fever, lest it should become the victim of hooping-cough, which generally exerts so formidable an influence on an exhausted frame.

The youngest child I ever attended for hooping-cough was an infant of a fortnight old. Three children of the family had the disease at the time it was born. The cough was frequently very severe, and it was necessary to hold the child forward with its face to the ground to prevent it suffocating; this is always necessary in young infants. This child recovered. It took the following prescription for three weeks. *R. Acidi hydrocyanici diluti gtt. i. ; Sy. papav. ʒj. ; Aq. ʒix. : Ft. mist.* The fourth part twice a day.

I attended a little girl of three years old who was attacked with hooping-cough, and who had previously been suffering for some time from epilepsy; and who had also one or two fits during the progress of the disease. The medicine I prescribed for her was acidum hydrocyanicum dilutum, with bi-carb. sodæ and sy. papav. She took this for some time, and very shortly after commencing with it, the epileptic fits ceased,\* and both diseases disappeared from the use of this one form of medicine. She has had no return of epilepsy up to this time, which is now three years since her recovery from hooping-cough.

The medicines which exert a salutary influence in this disease, I have found to be reduced to a very small number, when compared with the host of those prescribed for its cure. It cannot be denied that various remedies, some of which are very simple, exercise control over the disease; but it is equally true that hooping-cough, when it occurs in a healthy child, and the season is favourable, requires frequently no medicine at all. The obstinate character of a complaint may usually be inferred from the number of medicines, frequently of the most opposite characters, that are said to be effi-

\* It is well known to medical men that one form of epilepsy—the nervous—is greatly benefited by the use of acidum hydrocyanicum.



cacious for its cure ; and it is on this account that chronic diseases are frequently of much longer duration, from disappointment being felt that the good effects of a particular medicine are not displayed with that degree of rapidity which is desired and expected from its use ; this medicine being consequently omitted for another, which is readily selected, when there are so many which have the character of specifics. If, in the first stage of hooping-cough, (when the catarrhal symptoms with fever are present,) the medicine be administered, which is only adapted for the second, (when these symptoms have subsided,) injury, rather than benefit, to the patient will be the result.

Hooping-cough is usually found to have two stages. The first, which occurs on the invasion of the disease, is attended with the ordinary symptoms incident to catarrh, or bronchitis ; the second occurs when fever, the prominent symptom of the first, has subsided, leaving a cough of a convulsive kind, frequently followed, after eating, by vomiting.

In many children the first stage is scarcely to be discerned, in consequence of the extreme mildness of the catarrhal symptoms, the cough peculiar to the second appearing to come on suddenly. This may be regarded as a favourable sign, on account of the powers of the body not having been debilitated during the first stage. These children usually recover quickest.

The treatment of hooping-cough in the first stage, when the catarrhal symptoms are present, requires to be the same as that found successful in bronchitis when no hooping-cough exists. The child should be confined to one room, and mild febrifuge medicines administered. The diet should be light and farinaceous; and if any urgent symptoms arise, involving considerable derangement in the functions of the lungs, heart, or brain, the treatment must be conducted upon the principles which are specified in the observations on "Bronchitis."

The medicine, by far the most successful and certain in curing hooping-cough in the second stage, is hydrocyanic acid. This, *when good*, I have never found to fail in controlling the spasmodic character of the cough; it lessens its frequency, abates its violence, and, at the same time, tranquillizes the stomach. When increased to the maximum dose, according to the age of a child, it sometimes occasions giddiness and pallor; but these symptoms are of no moment, and are easily got rid of by discontinuing the medicine for a day or two. It may be administered as long as the convulsive and spasmodic cough continues. I never saw any ill effects arise from its proper use; and I cannot too highly extol the virtues it possesses in shortening and ultimately curing the disease. Its great advantage consists in being suitable to infants

of any age, the taste, when diffused in water with syrup, not being at all unpleasant. It may be combined with alkalies, without its medicinal qualities being impaired; and this combination is often necessary, when the matter ejected from the stomach is found to smell sour: the bi-carbonate of soda is the most preferable and most palatable. One drop of the acid may be given twice a day to a child of six months old, and gradually increased according to the violence of the cough. The usual prescription I employ is the following:—*R. Misturæ amygd. (vel aquæ) ʒxss; Syrup. papaveris ʒiss.; Acidi hydrocyan. dil. mʒij. ad vj.; Bi-carb. sodæ gr. vj.* Halftwice a day for a child two years old. It is seldom necessary to go beyond three drops of the acid twice a day, though I have met with cases in which it was necessary to exceed that quantity. The preparation of hydrocyanic acid which I use is Scheele's strength, prepared by Mr. Morson, of Southampton Row, and which I have always been able to depend on

If—after the spasmodic and convulsive symptoms of the cough have yielded to the influence of the hydrocyanic acid,—a species of chronic bronchitis is found to remain, it will be well to substitute another form of medicine for the cure of this result of prolonged irritation. The medicine I have found most successful for effecting this purpose is the dilute sulphuric acid, in combination with alum

and sedatives. The following prescription is the form most convenient:—*R.* Alumin. exsiccat. gr. iv.; Acidi sulphur. dil.  $\mathfrak{m}\mathfrak{v}$ .; Tinet. opii camph.  $\mathfrak{m}\mathfrak{x}\mathfrak{x}$ .; Sy. papav.  $\mathfrak{z}\mathfrak{j}$ .; Inf. rosæ  $\mathfrak{z}\mathfrak{i}\mathfrak{x}$ .; Ft. mist.  $\frac{1}{2}$  bis die. This for a child two years old. The alum may be increased gradually, until the dose taken amounts to four grains twice a day.

Sighing, indicating debility of the respiratory organs, is sometimes found to exist after hooping-cough has subsided. This is speedily cured by the administration of one gr. to gr.iss. of quinine, and five drops of dilute sulphuric acid, in an ounce of water, twice a day; and sponging the chest and arms with tepid water in the first instance, gradually changing it to cold.

Friction down the spine and over the chest once or twice a day, with the compound camphor liniment, reduced according to the age of the child, with spirit camphor, is a good remedy, and equally efficacious with more offensive nostrums, such as Roche's embrocation, garlic, &c., &c.

Sponging the chest and arms with salt and water, or vinegar and water, tepid, for the first time or two, in winter and spring, before a fire, will have a bracing and invigorating effect. I knew a gentleman who never succeeded in getting thoroughly rid of hooping-cough until he had adopted this plan; after the first sponging he had no return of the cough.

Change of air, in the second stage of this disease, is, of all known remedies, the most effectual in promoting its cure. Inland air is preferable to sea air, in the majority of instances. The more frequently the air is changed, if the disease does not appear to yield, the better.

In concluding this chapter, I beg to present the reader with the opinions of the late Dr. James Gregory on hooping-cough, as they were frankly expressed by him in a letter to a non-medical friend of his residing in London, who having his wife and a daughter ill of that complaint, had written to the doctor for his advice. The letter is printed without the slightest alteration; the portions which are in italics being such as are underlined in the original.

“Edinburgh, Wednesday Night, 7th July, 1813.

DEAR SIR,—I am very sorry that my absence from Edinburgh on a distant professional visit, and the consequent urgency of my business in Edinburgh, both visiting and letter-writing, since my return, have, till this morning, prevented me from answering your letter of the 29th of June; which I received, in due course, near a week ago. But I can safely assure you that neither Lady Frances nor your little girl have suffered by that delay on my part. If I had had nothing else to do, I should not have set you to *doctor* them for the

cure of the hooping-cough: but should have advised you, as the only rational thing that you could do for them, if they were *really very ill* with that disease, to put them under the immediate care of some judicious medical practitioner; who might, very probably, *relieve their sufferings*, and *avert the danger* which *threatened* them; though he *certainly could not cure the hooping-cough*; and who, if he chose to act honestly and speak the truth, would tell you that physicians *have no remedy* for the hooping-cough, any more than they have for the plague or the hydrophobia, the scrofula or consumption.

“The hooping-cough *runs its course* in spite of us. We not only have *no direct or specific* remedy for it, (like mercury for the . . ., brimstone for the itch, peruvian bark for intermittent fevers, &c.,) but we find it *impossible to stop or remove* it by the operation of *any or all* of our most powerful general remedies;—such as bleeding, blistering, purging, vomiting, sweating, opium, &c., &c.

“In general, (nineteen times out of twenty,) the hooping-cough lasts for three or four months: and after being pretty severe for some time, (not only *for days*, but often *for weeks*,) *gradually* becomes *milder*, and at last ceases entirely. In *such* cases *no remedies are needed: none can do any good; and all strong remedies do harm.*

“It is generally *mildest and least dangerous* in

*fine warm weather of summer : more severe and, of course, more dangerous, in the cold wet weather of winter.*

“ When there is *no fever* with it, or when the *fever soon subsides* ; when the breathing continues easy ; when the *expectoration* is *easy*, and *moderate in quantity* ; when the *hoop* (or *back-draught*) is well-marked ; above all, when the *fits of coughing* end with *spontaneous vomiting* ; the disease, frightful as it must appear to those not used to see it, is of little or no danger, and neither requires, nor can admit of, the use of any remedies.

“ But, on the contrary, when the *fever continues or increases* ; when the *breathing* grows *difficult* and *oppressed* ; when there is *no expectoration*, or very *scanty* and *difficult expectoration*, or *excessively copious expectoration* ; when there is *no spontaneous vomiting* ; when even the *back-draught* (or *hoop*) is *not distinctly formed* ; and worst of all, when *convulsion fits* come on, *the danger of the disease is very great* : and the *greater*, in general, the younger the child is.

“ In such circumstances, *many* and often *very strong remedies* are *needed* : bleeding with the lancet or leeches ; blisters, vomits, purges, warm bathing, sweating, opium, hemlock, &c., &c. ; and *sometimes* these *abominable remedies* do good ; and SOMETIMES THEY KILL the patient. “ *S'ils n'emportent pas le mal, ils emportent au moins le*

malade." In the hooping-cough, as in *most* other diseases, *nothing is a remedy but what becomes so by being well timed and judiciously employed.* Were I to tell you how to treat the hooping-cough, and you were to practise accordingly in your own family, you would soon be *a daughter out of pocket*; and *would have to go to market for another wife.* You may judge from all this that *my trade* is not quite so easy as you think it. Best wishes to Lady Frances. Tell her from me, never to allow you to *doctor* her or her children.

Yours, most truly,

J. GREGORY."



## CHAPTER VI.

## CROUP.

CROUP is a disease which may be said to be almost peculiar to childhood: the instances occurring in adults being comparatively rare. The alteration which takes place in the size of the larynx, and upper part of the windpipe, when puberty has arrived, seems to render those parts less susceptible to attacks of this disease.

This disease may occur at any period, from the age of a few months until puberty; though children between one and five years of age appear to be most subject to its attacks.

The predisposing or exciting causes of croup are exposure to damp and cold air, and to easterly or north-easterly winds; and, in young children, the irritation of teething. It has sometimes appeared to be epidemic; and is by some supposed to be contagious. This opinion is most probably founded on the fact of numerous cases occurring at the

same time ; although it would be at least as reasonable to conclude that such presumed evidence of contagion results from the influence of the peculiar states of the atmosphere, just enumerated, on the health of young children. The influence of depressing agents is known to affect materially the vital organs, and the secretions peculiar to them. Croup is a comparatively rare disease in places which are well drained, and where the inhabitants are free from the undermining influence of a damp atmosphere.

A child that has once suffered from this disease, is very liable to a return, owing to the organs of respiration continuing weak after the first attack, especially if blood has been drawn for the removal of the complaint.

The disease, though developing itself suddenly, yet frequently begins with a hoarseness and wheezing, short dry cough, and sometimes a rattling in the throat when asleep. The child, usually, wakes from its sleep, and gives utterance to the peculiar shrill-sounding cough, similar to the crowing of a cock, or to the noise a fowl makes when caught in the hand ; the face is flushed, and, from the impeded state of the respiration, the veins of the neck swell. At the commencement of the disease the cough is dry ; but soon a viscid matter is brought up, with portions of film or membrane of a whitish colour ; and the efforts made to expectorate these are so violent and distressing, that the child appears in

danger of immediate suffocation. This description answers to what is usually considered to be inflammatory croup.

There is another form of the disease which has received many names, but which appears to be most frequently designated "*laryngismus stridulus*." It is supposed to be peculiar to children of relaxed fibre, and general constitutional debility, evidenced by the paleness of complexion, languor of circulation, &c. This disease occurs suddenly, without any of the previous symptoms of catarrh or oppression of the respiratory organs, and, in many instances, death speedily ensues. The child is suddenly seized with a gasping for breath, throws back its head, and the face becomes black; and I have known a child die in the nurse's arms before medical aid could be procured. This form of disease, I may say, occurs only during the period of dentition, and is chiefly referable to that cause.

Of all the exciting and predisposing causes of croup, cold and damp weather, is, however, the most influential. The energies of the system are always less, when the atmosphere is in this state, than at any other time; and invalids are invariably most sensible of its effects, as is evinced by the increased languor and debility which they experience. Damp weather occasions a diminution of the quantity of electric fluid in the body; hence the necessity of attention to warm clothing for the

protection of infants and weakly persons, who ought, in such a state of the atmosphere, to wear flannel, as it is one of the best non-conductors. During damp weather, affections of the throat are most common; relaxation, or want of tone, being the chief symptom of diminished power in the system.

The most striking peculiarity in what is called inflammatory croup, is the formation of an albuminous membrane in the windpipe, and sometimes in extreme cases, extending to the bronchi, or divisions of that organ. Sometimes in those cases which end fatally, a thick glutinous or a stringy membrane is discovered. Dr Copland says, "When a child dies very early in the malady, instead of the albuminous coating, a tenacious or reddish frothy mucus is only found."

There has been much difference of opinion existing amongst medical men as to the nature of Croup: many contend that it is inflammatory, and only to be effectually relieved by blood-letting; whilst others assert, on the contrary, that it is a disease from the first of a spasmodic nature, and only to be safely treated on the principles applicable for the alleviation of spasm.

Some years ago I had the opportunity of witnessing several cases of this disease, occurring in children past the age of dentition, treated by a gentleman of high character in his profession, who viewed the disease as arising from inflammation, and

adopted blood-letting as the chief remedy. Most of the cases terminated fatally.

It is a circumstance greatly to be deplored that no means have hitherto been devised to establish a correct opinion, founded on the result of a large number of well registered cases, treated by opposite methods,—not only in this disease of infancy, but others also.

If one individual asserts that he has cured this disease without having had recourse to blood-letting, another, who thinks that it is only to be cured by blood-letting, insinuates that the cases were of a peculiarly mild kind, and did not warrant the practice.

We are too prone to adhere to particular methods of treatment, and believe in their excellence, accordingly as our minds may have been directed at the outset of our professional career, and according to the theories of disease which have been instilled into us at that time.

It is difficult to persuade one who is favourable to the adoption of blood-letting in this or any other disease, presumed to be inflammatory, to abandon this mode of treatment, and adopt that which is found in other hands to be attended with success. The mind being wedded to one theory, though admitting the complications of disease, cannot divest itself readily of previously formed opinions ; hence the uncertainty which must

continue upon this, as upon numerous other points, until it shall be generally agreed to determine the correctness of conflicting opinions by their consequences when reduced to practice.

From an attentive examination of the opinions of different authors of established reputation, and from a diligent observation of the symptoms and character of the disease as it has come under my own notice, I have come to the conclusion that croup is spasmodic, and one belonging to the class of maladies arising from irritation.

The sudden development of the disease is strongly indicative of its spasmodic nature ; and the irritation and agitation, kept up by incessant coughing, appear to be greatly influential in producing the exudations which take place from the delicate and susceptible mucose membrane lining the trachea.\*

The treatment I have found most successful is that

\* If it were possible by chemical analysis to ascertain the nature of the first secretion, ejected from the trachea upon an attack of croup, some light might possibly be thrown upon this subject as to the real cause of the disease. If the mucus secreted were found to be as caustic and irritating in its effects, as the secretions from the Schneiderian membrane lining the nose are known to be in certain states of the body, when cold attacks it, producing excoriations upon the lips, &c., the extreme violence of the symptoms would thus, in a great measure, be accounted for ; and then should we have a useful indication in the treatment of the disease, as the membrane lining the trachea is a continuation of that which lines the nose.

which is most efficacious in controlling irritation. This consists in the administration of emetics,—not to prostrate the system by the amount of the dose, but to produce decided vomiting ; and in the application of a stimulating liniment composed of *Lin. camph. comp.* ℥iss. ; *Tinct. cantharid.* ℥iv. : to be rubbed for five or ten minutes, three times a day, about the throat and upper part of the chest and back, applying an interposing substance as a screen between the chest and mouth, to prevent the vapour being inhaled.

After the operation of the emetic, a dose of calomel should be administered to unload the bowels. The quantity of tartar emetic, necessary for a child three years old, is a quarter of a grain. Some prefer ipecacuanha ; but as this, when its emetic effects have ceased, does not exercise so powerfully sedative an influence on the circulation as emetic tartar, it is not, in this disease, so effectual a remedy as the latter.

When the emetic has operated, and the purgative also, antispasmodics of a decided kind ought to be administered. *R. Acid. hydrocyan. dilut. miss.*—ij. ; *Sodæ sesqui-carb. gr.* iij ; *Tinct. opii* ℥ij. ; *Sy. papaveris* ℥j. ; *Aq. anisi* ℥vij. : *Ft. mist.* Half every four or six hours for a child three years old. If the spasmodic difficulty of breathing recurs with violence, recourse must be had again to the emetic. A liniment of milder nature should be used when

the first severe symptoms have abated, as the continuation of the former would irritate the skin more than is necessary. Equal parts of Lin. camph. comp. cum spt. camph. will keep up a sufficient amount of counter-irritation.

The child, on recovery from an attack of croup, should not be allowed to go out of the house for many days after the disease has disappeared, and the body should be well guarded by flannel against the vicissitudes of temperature. The strength of the system and character of the blood will be improved by administration of the following mixture:—  
R. Inf. rosæ comp. ʒvij. ; Syrup. papav. ʒj. ; Tinct. Opii camph. ʒxxx. ; Acidi sulph. dil. ʒv. ad. x.  
One half to be given twice a day.

In the last stage of croup, when all other remedies have failed, trachæotomy has been proposed by some medicalmen; but has been condemned as hopeless by others. I cannot see the force of one of the chief objections to it, namely, that “the whole of the trachea, down to its divisions or bifurcations, may be invested with foreign membrane;” for it is just as likely that it is not; and, even if it were, the removal of a portion of the obstruction might so far give relief as to enable the patient to survive the crisis, and to allow of the ultimate cure being effected by other remedies.



## CHAPTER VII.

## MEASLES.

THE following is Sydenham's minute and faithful description of the symptoms and course of this disease.

“ On the first day, the symptoms are chilliness and shivering, alternately succeeded by heat and cold. On the second day, appears a perfect fever, accompanied with more or less derangement of the stomach, thirst, a loss of appetite, a white tongue, (sometimes brown, but moist,) a cough, more or less severe, heaviness of the head and eyes, continual drowsiness, and a constant discharge from the nose and eyes. These symptoms are succeeded by sneezing, swelling of the eyelids,—immediately preceding the eruption; vomiting and looseness, attended with green evacuations, especially in children who are cutting their teeth. The intensity of the symptoms increases till the third or fourth day,

on which, and sometimes on the fifth day, little red spots, like flea-bites, about the size of millet-seeds, appear on the neck, forehead, and face; and growing more numerous and large, unite, and thus mark the face with large red spots. The little red pimples, composing these patches, have now risen a little higher than the skin, and feel rough to the finger when passed over them. From the face and neck, where alone they first show themselves, the spots extend to the breast and belly, and then to the thighs and legs; but in these parts they are large, and do not protrude from the skin.

“The precursory symptoms do not abate upon the appearance of the eruption, as in small-pox, excepting the sickness and nausea, (although in adults I have known the latter symptom attendant through the whole course of the disease,) the fever, cough, and difficulty of breathing increase, the watery discharge from the eyes, the drowsiness, and loss of appetite continue. On or about the sixth day, the forehead and face become rough, the eruption begins to dry, and the skin separates; but in the other parts of the body, the spots still appear large and red. About the eighth day, they vanish from the face, and are scarcely visible upon the rest of the body. On the ninth day, they entirely disappear; but the face, limbs, and sometimes the whole body, seem covered with bran-like scales, and the cough, fever, and difficulty of breathing,

grow worse, and usually continue so for the next three days."

Measles may occur at any time, from three days to three weeks, after exposure to specific contagion. The usual time of the appearance of the rash is from seven to fourteen days after the exposure. In one case that came under my observation, the time that intervened from the first exposure to the manifestation of the disease, was four weeks. The first symptoms are so like those of an ordinary catarrh, that children are frequently believed to have had the disease, when, in fact, they have had one of an entirely different nature; hence many persons assert that measles will occur twice. So far as my own experience has extended, I have never known the recurrence of real measles. The complaint frequently mistaken for it is one in which an eruption appears during teething, attended with the usual symptoms of a cold; sneezing, however, is generally absent, and there is not so much swelling of the eyelids; and the eruption (which seems very much like that in measles till closely examined) commences on the region of the stomach and back, instead of appearing first on the face and neck. The secretions of the alimentary canal are generally much deranged; but if these are attended to, and a dose of hydrarg. cum creta and rhubarb be administered, the eruption will entirely disappear, even in twenty-four hours, not assuming

those phases which measles generally present with so much uniformity.

The disease just mentioned appears to be that which has received the name of *Rubeola sine catarrho*,—measles without catarrh ; and I am of opinion, that when the measles are believed to have occurred twice, the disease, in the first instance, has been this ; and most probably the severe constitutional symptoms attendant upon it, have caused the absence of the more decisive and characteristic symptoms of real measles to be overlooked.

There is also a form of measles designated *Rubeola nigra*, or black measles. This peculiarity is dependent for its production upon an exhausted state of the vital powers, and languid circulation of the blood, which interferes with the correct performance of the respiratory functions. The tendency to low fever, when this prevails, requires that the patient should be treated on a stimulating plan, similar to what is adopted, in diseases of that character. The administration of ammonia, æther, and camphor, is necessary. The early use of mineral acids in these cases is attended with the most beneficial results, when the power of the circulation has been sufficiently restored by stimulants.

The distinguishing marks between scarlet fever and measles, in their first stages, consist in the former not having those catarrhal symptoms which are generally the precursors of the measles. In scarlet fever, the

mucose membrane of the fauces, as well as the tonsils, is inflamed, and generally, but not always, there is an ulcer or slough upon one or both of the tonsils. In measles, there is a dotted appearance on the mucose membrane of the fauces, which is of a deeper red than usual. The eruption of scarlet fever is diffused like a series of blushes, and is smooth, the skin appearing white between them. In measles, the surface is rough, and dotted in small points of the size of millet-seeds. In scarlet fever the colour of the eruption is brighter than in measles.

Measles, in general, is a disease which requires but little medical treatment in children who possess the advantage of careful nursing, and who have attention bestowed upon their health.

There are, however, causes which are sometimes found to prevail that occasion great mortality in this disease, amongst the chief of which are impure air, bad diet, and inattention to the state of the bowels. A close confined atmosphere is undoubtedly the most frequent cause of this malady assuming a fatal character. Children in the country generally have this disease favourably, and no bad consequences are found to result; but in large towns, the result is widely different, not only amongst the poor, but frequently amongst the rich. When a child from inattention or ignorance has been subjected to too great a degree of heat, exposure to draughts of air, has been too lightly clothed, or im-

properly fed, this disease is liable to assume a character much more alarming than that which presents itself, when all these aggravating circumstances have been guarded against. Another frequent cause is the abstraction of blood from young children living in impure air, or in whom the vital powers are of low standard, and who suffer from oppression of either the brain or lungs, previous to, or after the appearance of the eruption.

It is with the intention of relieving the different vital organs, which are sometimes observed to suffer congestion during the progress of this disease, that the abstraction of blood is had recourse to ; and though authority is strong upon this point, yet I venture to assert that these congestive states, when they do occur in infants, may be treated successfully without any such means being used, and with the decided advantage of the child's recovering much more speedily, and the chances of the disease proving fatal materially lessened.

In measles, it is well known that the symptoms of common catarrh are the forerunners of the eruption ; and according to the constitution of the child, are they manifested with more or less intensity. In many cases when the breathing is most hurried, and the face flushed, how common is the application ; of leeches ! The bad effect of the abstraction of blood is evident, and continues long after the original disease has vanished. Asthma, distortion

of the spine, scrofula, mesenteric disease, permanent deafness, and incurable affections of the eyes, are sometimes the sequelæ of this disease.

I have never seen dropsy occur as a sequela of measles, but it is of common occurrence after scarlet fever.

After measles, the urine in delicate children is sometimes observed to have a peculiar fishy smell, and to deposit a copious white sediment. This indicates the necessity for vegetable tonics, in conjunction with dilute sulphuric acid.

In the complication of measles with severe bronchial irritation, or with affections of the lungs proceeding from the imperfect circulation of blood through them, the treatment to be pursued must be in accordance with that which is found to answer successfully in these affections when unattended with any eruptive disease.

In measles there is generally greater interruption in the functions of respiration, and more bronchial irritation than in scarlet fever, which may perhaps be the cause of the eruption being of a darker hue than in the latter disease.

During the progress of all eruptive diseases, there is usually excitement manifested in the respiratory organs. This depends chiefly upon the nervous organisation of the child ; and it is a matter of great importance not to mistake the amount of this excitement in particular constitutions, and infer, that

because the symptoms appear pregnant with danger, they invariably arise from inflammation, or a tendency thereto. A child suffering from measles will frequently display all the symptoms of a severe attack of bronchitis, followed with congestion of the lungs, or that imperfect circulation of the blood through them, which is usually regarded as inflammation of those organs. Now, if, with the view of promptly relieving those symptoms, recourse should be had to blood-letting, such a course will, in all probability, not only retard the recovery of the child, but also, by diminishing its vital energy, augment the force of the disease; whereas, by proceeding more cautiously to allay the irritation of the bronchi and lungs by a soothing mode of treatment, these alarming symptoms will speedily disappear, and allow the child to experience the benefit of an undiminished quantity of blood to facilitate the return to convalescence.

The same caution is necessary in treating the various symptoms of apparent danger which arise from imperfect performance of the functions of the brain during the existence of eruptive diseases, when the fever is at the height; for great as the danger may seem that a child is in, from delirium, coma, or stupor, the alarming symptoms will disappear, if the lenitive treatment appropriate to irritation be adopted.

All kinds of eruptive diseases, occurring after the



debilitating influence of previous malady, are to be viewed with much suspicion. Whatever has a tendency to lower the heart's action, impedes the due production of the eruption ; and though a considerable degree of fever and restlessness may prevail, yet the utmost caution in administering lowering remedies must be observed ; for probably much of this unnatural excitement arises from the child's previous state of debility. It is in this state that the warm bath is so serviceable, by causing a free and more equable distribution of the blood over the surface, and thereby tranquillising the heart's action.

The medical treatment in such cases requires to be of the most gentle kind. Such opening medicines only as merely promote an evacuation of the bowels, without any loss of the serous portion of the blood, are to be given ; and the restlessness and fever are to be subdued by mild salines and sedatives.

When the premonitory symptoms of measles show themselves, the child should be kept in an apartment in which the heat should be regulated to 60° or 65°, and this heat should be maintained throughout the disease. When the eruption appears, the child should be confined to its bed, and remain there for the three or four days of the eruption, even if the constitutional symptoms are but slight. This precaution is highly necessary, as it prevents the child from running any risk of

catching cold from exposure to draughts of cold air, which might occasion a retrocession of the eruption. The diet should be light and farinaceous. A mild diaphoretic medicine, by determining moisture to the skin, relieves the symptoms of catarrh, and tends to keep down irritation: a dose of the following mixture every six hours for a child three years old is usually all that is required.

R. Liquor. ammoniæ acetatis ℥vj.

Tincturæ hyoscyami ℥xx.

Syrup. papaveris ℥ij.

Aquæ destillatæ ℥iiij. : Ft. mistura.

The fourth part to be given every six hours.

If the cough should be hard and dry, and the pulse tight, the addition of twenty minims of vin. antimonii tartarizati, or forty minims of vin. ipsecacuan., according to the powers of the child, will relieve it. An occasional dose of Rhubarb gr. vj.; Hydrarg. c. creta gr. ij.; or Hydrarg. sub. gr. j. will be all that is required as an aperient. Should the fever be of an ardent character, it will be proper to substitute the bi-carb. pot. and lemon juice as a saline, in preference to the Liq. ammoniæ acetat.

In the severer forms of this disease, the brain will sometimes be found to be alarmingly affected; and this generally comes on about the second or third day of the eruption. In these cases I have mostly found that the cough has been more dis-

tressing than usual ; and from the perpetual irritation which it has kept up in propelling the blood to the brain, it is probably the chief exciting cause of this organ being so affected. When this occurs, the face will be flushed, the eyes redder and more suffused than usual, the tongue dry and of a deep red, the skin hot, and pulse rapid. Delirium will exist. This state is naturally looked upon with much alarm, and the common opinion is, that when these symptoms are present, the child is suffering from inflammation of brain, and blood-letting or leeching is usually had recourse to.

These symptoms may be successfully combated with more manageable and certain remedies, viz. calomel and antimony. For a child of three years old I give the following :—*R.* Calomel gr. iv. ; Pulv. Jacobi ver. gr. vj. ; Sacch. purif. gr. vj. Divide in chartulas vj. One to be taken every four hours. It will very rarely be necessary to give more than the above number of powders ; black, bilious motions will result from their use, and the alarming symptoms gradually subside. As I look upon the great irritation produced by the cough, to be the chief exciting cause of this affection of the brain, it is an important point to allay its influence, and this may be effected by the following mixture. *R.* Liq. am. acet. ʒviij. ; (vel Bi-carb. pot. ℥j. et succi limonis ʒss ;) Sy. papav. ʒij. ; Tinct. camph. c. ʒi.

ad ij. ; Vin. ant. tart. ℥xx. ; Mist. amygdal. ʒv. A fourth part to be given every four hours.

It is very necessary to be cautious not to administer more of the calomel powders than are sufficient to abate the symptoms dependent upon the irritation of the brain. This will be most decidedly evidenced by the altered state of the tongue, which will change, from being dry and of a deep red, to a moist and white state ; there will also be less fever, more paleness of face, and diminished suffusion and redness of the eyes.

If the calomel is continued *after* these alterations in the condition of the child have occurred, it will then begin to produce the effects of irritation peculiar to itself as a poison ; such as great restlessness, pinched features, a flushing of one cheek, a purging of green coloured evacuations, and all the symptoms usually displayed in irritation of the mucose membrane of the bowels.

In infants, the purgative effects of this remedy indicate when it is to be discontinued. I have known calomel continued, to the great injury of the little patient, on account of the unnatural appearance of the motions, which it makes of a green colour. It is very rare for children to be salivated, and hence it has been concluded that they can bear larger doses in proportion to their age than adults. The practice, however, that is founded on

this opinion is fraught with peril. In adults, in whom it is necessary to produce salivation, it is found that if a purging occurs, calomel fails in producing that effect ; and opium is usually combined with it to retain it in the system. The purging produced in infants by calomel is equivalent to salivation in adults ; and directly that green coloured evacuations occur, it ought to be abandoned, for beyond that point it acts as a poison on the delicate and susceptible system of the infant.

When coma and stupor occur in this disease, small blisters behind the ears, and the hot bath may perhaps afford relief. When the extremities are cold, stimulants, as ammonia, and the compound sulphuric æther, may be given ; and the external application of ammonia to the nose, to encourage a discharge from it and the eyes, and to excite the sensibility of the brain, may be of service.

The convulsions, and other affections of the brain, which occur during and after measles, are to be treated with reference to the nature of their individual symptoms.

When the eruption has disappeared after an attack of measles, the skin is found to be harsh and dry. There is usually a short hard cough, and the body is more or less reduced and languid, according to the constitution of the child, and violence of the eruptive fever. The appetite remains impaired

for some days, and the child looks pinehed about the face.

The use of the warm bath, two or three days after the decline of this disease, is very grateful to the child, for it removes the scaly portions of the skin, and all obstruction from its pores. The appetite is increased by it, and the child soon begins to evince greater liveliness. Care should be taken for some time to keep the chest and arms covered; and the extra apparel used should not be laid aside until the cough has entirely subsided, and the appearance of health is again restored to the child. The diet should be light and nourishing. Calves-foot jelly, to which a little wine has been added, light puddings, and beef-tea, are proper. When the weather is fine, exercise in the open air is of great service, and restores the healthy state of the system sooner than anything else. Attention to these points is, in the majority of cases, all that is necessary; but there are instances in which the aid of medicine is required, namely, where a weakness of the bowels has been left behind, where cough and irritation of the chest also continue, or affections of the eyes, drowsiness, &c. A wash for the eyes, composed of five grains of the sulphate of zinc to two ounces of rose or elder-flower water, will generally remove the redness and irritation. Some mild tonic, in combination with a vegetable

bitter, and a little aniseed with syrup of poppies, will, where the chest remains subject to the irritation, speedily allay it.

℞. Tinct. camph. c. ʒj.  
 Syr. papaver. ʒj.  
 Essentiæ anisi ℥ij.  
 Inf. cascarillæ ʒx. : Fiat mistura.  
 The half twice a day.

When a purging continues after the disease, it is generally a sign of debility; and a mild tonic regimen must be adopted accordingly. The medicine which I have found to succeed the best in such cases is the following :

℞. Confect. aromat. gr. x.  
 Tinct. cinnamomi ʒss.  
 Syr. papaveris ʒiss.  
 Decoct. cinchonæ ʒx. : Fiat mistura.  
 The half twice a day.

This taken for a few days, with a large proportion of rice for diet, will generally be found efficacious.

In measles more caution is to be observed in the use of apericnt medicines than in scarlet fever. The mildest aperients are all that are required in the former, whilst the more active are the best adapted for the latter. For the correction of a confined state of the bowels, occurring after measles, castor-oil, senna-tea, with the addition of prunes, or a few grains of rhubarb, answer best.

After measles, bleeding at the nose sometimes occurs in children of leuco-phlegmatic temperament, and is frequently considered, though erroneously, as resulting from plethora; it is unattended with danger, provided it do not continue too long, nor occur too often.



## CHAPTER VIII.

## SCARLET FEVER.

SCARLET FEVER has been divided into three kinds : *Scarlatina simplex*, or simple scarlet fever, unaccompanied with sore throat ; *Scarlatina anginosa*, accompanied with sore throat ; and *Scarlatina maligna*, or malignant scarlet fever, with ulcerous sore throat.

In *scarlatina simplex*, about the third or fourth day of the fever, the face begins to swell ; and there appears, dispersed over the skin, a rash of a vivid red colour, which at length coalesces, and after three days disappears, leaving a desquamation of the cuticle, which falls off in heavy scales, and is occasionally succeeded by *anasarca*.

The treatment of this form of the disease is very simple, and requires that the patient be kept in a

moderate and equable temperature of from 55° to 60° of Fahrenheit. The apartments should be kept clean and open ; the diet should be light, without animal food, and with cooling, acidulated liquids for common drink ; and gentle aperients should be administered, more particularly towards the decline of the eruption.

As there is always much uncertainty in this disease, of the continuance of the mild character which marks its access, it is advisable to guard against any aggravation of the symptoms by administering a slight tonic of the following kind throughout the course of the fever. R. Infus. rosæ ʒi. ; Acid. sulph. dil. ʒv. ; Sy. papav. ʒi. Ft. haust. To be taken thrice a day. This medicine will exert a beneficial influence upon the blood, lessen the probability of any great change taking place in it to the injury of the system, and prevent the tendency to fever of a low type, which is induced by such derangement. It will also give tone to the stomach and bowels, and lessen the chances of the required aperients operating more strongly than is requisite. When there is considerable thirst, with much heat of skin, and restlessness, which are sometimes found to exist in the mild form of this fever, a gentle stimulating diaphoretic medicine, such as the following should be given. R. Liq. am. acet. ʒiss ; Spirit. am. arom. ʒiss. ; Tinct. hyosey. ʒxl. ; Sy. papav. ʒij. ; Aq. ʒijss. Ft. mist. A fourth part

every six hours. It is not, however, prudent to persevere longer in the use of medicines of a diaphoretic kind, which determine to the skin, than the case absolutely requires : this must be regulated by the judgment of the practitioner.

The disease, when it occurs in this mild form, scarcely produces any constitutional disturbance, but we are not on that account to forego the necessary caution, to prevent the child from experiencing some of the after consequences which frequently are observed to arise, however mild the disease may have been. The greatest care should be taken that the child does not catch cold ; and that it does not return too speedily to a full diet. When the dry cuticle begins to fall off, the warm bath should be used every other night, and the bowels kept moderately open by the use of mild laxatives. If swelling of the eyelids, or other parts of the face, of the hands, or feet, with a fulness about the abdomen be observed, a brisk purgative, composed of calomel and jalap, should be given every night, or every other night, according to the strength of the child : it will usually be found, that on alternate nights will be sufficient. This treatment should be continued so long as the dropsical tendency remains ; it will have the effect of curing this sequela of the disease, without having recourse to blood-letting, which by many is considered a necessary part of the treatment, although they would

not be likely to tolerate its use in any other form of dropsy.

Though the simple form of scarlet fever is usually observed to run its course with great mildness, yet it is sometimes observed that interruptions and aggravation of the symptoms occur, causing the disease to assume an appearance very different to what it had originally shown. The simple form of the disease may assume that of the malignant, and be attended with symptoms of extreme depression, and all the characteristics of typhus fever. As there is no disease which is so apt to present alterations in its course as this, it is highly necessary to watch with attention any variation in the symptoms.

The following is Hooper's description of malignant scarlet fever. "In the malignant form of scarlet fever, the symptoms first show themselves, by lassitude and great prostration of strength; dejection of mind, pain in the head; followed by soreness, with sense of straitness in the muscles of the neck and shoulders; rigor, horror, and other symptoms of typhus fever.

"On the second day there is usually found difficulty of swallowing; loss of appetite; nausea, and often vomiting; hurried respiration, interrupted by frequent sighs; hot breath; great thirst; hot and dry skin; small pungent pains as if occasioned by the point of a needle; quick and weak pulse, but sometimes hard.

“On the third day, the face, neck, and chest, appear redder than usual; or scarlet stains, or blotches, are observed about the mouth and nose; the submaxillary glands are enlarged and painful to the touch; the arches of the palate, the uvula, the tonsils, as far as the eye can reach, partake of the general increased redness. Collections of thick mucus, and specks, are often observed, yet at this period real ulceration seldom takes place. The redness in a few hours becomes general over the body, and increases to a great degree of intensity. It disappears upon pressure; the skin is perfectly smooth to the touch; nor is there the least appearance of pimples or pustules.

“On the fifth or sixth day, the intense scarlet gradually abates; a brown colour succeeds; when the skin, becoming rough, peels off in small scales, and the patient begins to recover strength and appetite. Not unfrequently, however, after a few days’ amendment, an unaccountable languor and debility is felt, accompanied by stiffness in the limbs; accelerated pulse; disturbed sleep; disrelish for food; scarcity of urine; dropsical swellings; sometimes anasarca alone; and sometimes anasarca combined with ascites, or with hydrothorax.”

The symptoms of an attack of malignant scarlet fever are so strikingly characteristic of those of typhus fever, that the similarity between the two

diseases should never be lost sight of. The great object in the treatment of scarlet fever is to preserve the strength of the body, and by that means shorten the duration of the disease. When this disease sets in, there is shown so great a deterioration in the blood, that the strongest efforts must be directed to maintaining the healthiest possible state of this fluid. Its character rapidly becomes watery, and there is so great a deficiency of cohesion in the particles, so speedy a disappearance of the red globules contained in it, as to render it unfit for the correct performance of its functions. Hence the frequent congestions, or accumulations which are observed to arise throughout this disease, in the brain, lungs, and liver, which congestions are the strongest evidence of the extreme debility which the whole body is labouring under. Bearing this in mind, we are not hastily to assume, that because the integrity of any one organ is interrupted, we can restore its proper functions by abstracting blood from its neighbourhood. We may certainly, *for a time*, relieve oppression in this manner, but it will aggravate, very shortly, all the symptoms, and add to the general exhaustion of the system, and tend to the extinction of life.

There is less danger likely to arise from the *too early* exhibition of stimulants and tonics, than from the opposite course of "lowering the fever" being adopted. It is much easier to pull down than to

build up ; and should our anxiety to keep the system from sinking, induce us to push generous treatment to too great an extent, we can speedily reduce the excitement thus occasioned, by administering medicine to act more freely on the bowels, and at the same time diminishing, to a moderate extent, the quantity of nutriment the patient has been taking. The fear of encountering the (often imaginary) consequences of over stimulation, is often productive of the greatest injury, not only during the protracted disease, but subsequent to it.

The mortality in malignant scarlet fever is sometimes very great,—sweeping off several children from one family. Dr. Stewart, in the Appendix to his translation of Billard's *Treatise on Diseases of Children*, says, “No age is exempt from the scourge ; it, however, prevails mostly among children ; and in the epidemic which prevailed in the city of New York, in 1837, in five hundred and seventy-nine deaths from this disease, one hundred and twenty-five were between the age of one and two years, and seventy-two under one year.”

Whether any portion of this great mortality arose from the peculiar views taken of the disease, it is not for me to say ; nor do I know if the majority of the medical men who treated the disease, entertained the same opinions of its sometimes inflammatory character which are entertained by

Dr. Stewart. What his opinions are will appear from the following extracts.

“ If the febrile action continue, or symptoms of cerebral or other local congestion, or severe inflammation of the fauces ensue, *blood must be taken*, either with the lancet, or by leeches applied to the affected part, according to the urgency of the symptoms and the condition of the patient. Every symptom shows a high state of inflammatory action. The skin is intensely inflamed, the fauces are in the same condition, the tonsils are loaded with blood and excessively tumefied, and the occasional formation of abscesses in the joints also prove the previous existence of inflammation in these parts.

“ With all these evidences of inflammation, blood-letting in some form, then, appears to be most rational, as it is the most effectual remedy; and I must bear testimony to the efficacy of this remedy both general and local, in this stage of the disease. The application of leeches to the throat is indispensable, and will often be sufficient to relieve the congestion of these parts, particularly if followed by a poultice. In severe cases, reliance ought not to be placed on leeches alone, but general blood-letting must be used early in the disease; for it is the deferring of this remedy a few hours beyond its proper time that has brought the remedy into disrepute.”



More recent opinions, possessing the weight of considerable authority, have, however, been expressed in opposition to these views.

Drs. Evanson and Maunsell object strongly to the use of general blood-letting in malignant scarlet fever, and say : “ If the affection of the throat be very distressing, occasioning much difficulty in respiration, before the appearance of sloughs, we may think it advisable to put leeches to the neck, or behind the ears ; and if intense headache and stupor exist at the very commencement, the adoption of a similar measure may be justifiable, upon the grounds of local congestion being presumed to exist within the head. This is the utmost extent to which we can ourselves conscientiously go, in recommending depletory measures in malignant scarlet fever.” \*

Drs. Fothergill, Huxham, and Currie, were strongly opposed to bleeding in any form of scarlet fever. Dr. Armstrong, it is well-known, advocated the practice. Numerous practitioners with whom I am acquainted are decidedly adverse to bleeding in any form, in scarlet fever ; and in their opinion on this point I entirely concur.

The suddenness with which life is sometimes terminated from an attack of scarlet fever, has been looked upon as arising from an overpowering shock to

\* Evanson and Maunsell on the Diseases of Children, p. 459. Dublin, 1842.

the nervous system, communicated by the contagion, at once prostrating the energies of the whole body. I am disposed to view this fatality as also arising, in some instances, from the great increase of the size of the tonsils, which, when extremely tumefied, put a stop to respiration, and produce suffocation, as if a foreign substance were inserted into the trachea. The return of the blood from the brain being interrupted by the pressure of the enlarged glands, the mental faculties are obscured, and the patient dies as in a state of asphyxia. When death has taken place in such instances, it has generally been after two or three days' illness; and before the energies of the body could have become so much prostrated, from the altered character of the fluids and solids incidental to typhoid fever, as to render it probable that death should have ensued in so short a time from this latter cause.

In persons of weakly frame, in whom the blood has been for some time gradually losing its healthy characteristics,—from mental anxiety, night watching, loss of appetite, or insufficient diet,—it is not, however, uncommon to witness a remarkably sudden depression of the energies of the system. What makes these cases more striking is, that the individuals have usually 'kept about,' as it is termed, to the last,—the friends of the patient usually expressing their

surprise that so alarming a state of exhaustion should occur so rapidly, without any evident cause.

Such sudden attacks of extreme exhaustion most frequently occur in delicate females of nervous temperament, whose minds possess more energy than their bodies do strength, and who do not yield to the influence of the disease, so long as they can combat with their feelings of debility, but suddenly give way, and are prostrated by the influence of the malady. The symptom which is most prominent, and complained of most, is intense headache : generally, there is intolerance of light and noise, and difficulty of keeping the eyelids from closing, in consequence of the pain of the head. The pulse is usually quick and small, the tongue is moist, and slightly furred, and little or no fever. The body is usually chilly, though subject to partial attacks of heat : the extremities are generally cold.

The sudden symptoms of extreme depression, frequently observed at the onset of scarlet fever, are analogous to those just related. The poison of the contagion of the disease exerts its baneful influence suddenly ; whilst the symptoms of exhaustion just enumerated have been as certainly produced, but by slower degrees.

In each case, but in scarlet fever more particularly, no time is to be lost in rousing the energies of the system, by establishing a reaction. This must not be done in a timid or irresolute manner,

but decidedly. Two or three grains of quinine, with ten drops of dilute sulphuric acid, a drachm of tincture of hops, half a drachm of tincture of henbane, in an ounce and a half of strong camphor mixture, should be given every four or six hours; this is the quantity for an adult, and, with the necessary variations, the same plan of treatment is proper for a child. It will, generally, not be more than twenty-four hours, probably not more than twelve, before the beneficial effects of this medicine is perceived. When once reaction is produced, a modified plan must be pursued, adapted to the peculiar constitution of the patient.

It matters not what the exciting cause may be that produces symptoms of depression and exhaustion in the system,—the treatment for the time, until reaction takes place, must be the same. The nervous energy must be restored, and the heart's action increased in power, to give the patient a chance of life in scarlet fever, when it sets in, in this form; and the prospect of a fever of long duration may be cut short by early establishing an amount of vigour in the system sufficient to withstand the debilitating influence of the disease. I have found that decided tonics, such as quinine, and dilute sulphuric acid, answer the end more effectually than ammonia, even in large doses.

One of the most striking peculiarities of epidemic diseases is the tendency to malignancy, or

rapid states of exhaustion, which they are found to assume. This was strongly evinced during the prevalence of influenza in 1837, when the mortality occasioned by this disease was very great. Those medical men who treated it upon an antiphlogistic plan, and who viewed it as acute inflammation of the bronchi, lost numerous patients; whereas those who treated the disease as one resulting from the effects of irritation in those structures, were far more successful: the mortality in their practice, from all that I can learn, was comparatively small.

When scarlet fever is epidemic, the tendency to fever of a low type is always shown. Whether this arises chiefly from the depressing influence which damp weather is known to produce, is a question of much interest to determine; it is, however, generally observed that in such weather the disease is most virulent, and that a sudden frost checks the mortality.

Drs. Evanson and Maunsell speak highly of the advantage to be derived from the use of an emetic in the beginning of scarlatina maligna; and in this stage of the disease, I have frequently witnessed its beneficial effects. "If anything gives a chance of cutting short a typhoid fever, we believe it to be the sudden shock produced upon the nervous system by the operation of an emetic; and accordingly our first step usually is the administration of a medicine of this nature."

An emetic draught, composed of ten grains of powder of ipecacuanha to five grains of sulphate of zinc, one drachm of syrup, and an ounce of water, followed by a tumbler full of warm chamomile tea, will speedily answer the purpose, and with but little distress to the system. This for a child ten years old.

It is necessary throughout the disease to give purgatives occasionally. The compound scammony powder with calomel gr. vj. to viij., for a child of the above age. Calomel gr. i. to ij., with powdered rhubarb gr. vj.; will remove the offensive secretions which always prevail in fevers of low character.

If the operation of any purgative should produce greater effect upon the bowels than is compatible with the safety of the child, the purging must be immediately stopped by giving a few drops of laudanum in conjunction with aromatic confection and cinnamon water, according to the age of the child.

When the tongue is red and dry, with slight fissures observable in it, much thirst and fever, with heat of skin, I have generally found the bi-carbonate of soda, given in the following manner, advantageous. R. Bi-carb. sodæ gr. xx.; Liq. ammon. acetat. ℥iv.; Spt. ammoniæ aromat. ℥ij.; Sy. papaveris ℥ij.; Decoct. cinchonæ pallidæ ℥v.; Ft. mist. A fourth part every six hours; and a powder at bedtime of three grains of Dover's powder; this for a child of ten years old. When the tongue

has become moist and pale, the greatest benefit may be expected from the administration of acids with quinine. Previous, however, to this occurring, a middle state is frequently found to prevail, when the tongue is moist, furred, and still red to a certain extent, the pulse rather quick, and the fever not thoroughly subdued; and when it seems no longer proper to persevere with the saline treatment. In these circumstances, the dilute sulphuric acid, five drops for a dose, in an ounce of infusion of roses, three times a day, will have a good effect, acting to a certain extent as a refrigerant, and as a tonic of an unstimulating kind. The appetite will soon be found to improve; and in many instances it is necessary to restrain the patient from indulging in too great a quantity of food, which, from the weakened state of the digestive organs, will not nourish in proportion to the quantity, but prove a source of irritation to the system, and be likely to produce a disease of a still more dangerous kind.

It is seldom that this fever is of an inflammatory character for a long period. It is, therefore, necessary to be careful in administering the ordinary saline medicines, more especially nitre, which, excellent as it is in many febrile diseases, has a remarkable tendency to lower the powers of life, and that very suddenly. When the skin is very hot and dry, and it is considered advisable to reduce this, the mixture composed of the bi-carb. potass. and lemon

juice, to which is added spt. am. aromat. ℥ss. for a dose to a child ten years old, with a little sy. papav. or tinct. hyosey. will, after a few hours, reduce the strength of fever, and prepare for the administration of supporting and stimulating medicines.

At the commencement of this disease, the glands about the throat will sometimes enlarge to a great size, extending from ear to ear; and I have frequently known leeches applied to diminish the tumefaction, but with the most serious results. These enlargements, if left alone, or gently rubbed with a stimulating liniment, will generally disappear during the course of the fever. I have seen the operation of an emetic speedily remove an enlargement of the submaxillary glands, which extended over the whole of a child's throat.

Pure air, and well ventilated apartments, are of the most vital importance in this disease. The more spacious the room in which the child lies, the better; and more than one child, suffering from the severe form of this disease, should not be allowed to occupy the same room. The unhealthy emanations from the body of the one affect the other, and prolong the disease.

If the child be of an age to gargle the throat, great relief will thus be afforded. Either of the following may be used. *R.* Acidi hydrochloricæ. ℥ss.; Mel. rosæ ℥j.; Inf. rosæ ℥vij.: Ft. gargar. If this should produce smarting and pain, the follow-



ing should be substituted:—℞. Tinct. myrrhæ ℥iv. ; Mel. rosæ ℥j. ; Decoct. hordei ℥viss. : Ft. gargar.

When there is no depression, or lowness in the pulse, and the heat of skin is steadily maintained, and the eruption of a good colour, great relief will frequently be experienced by sponging the chest, arms, and neck, with tepid vinegar and water, carefully drying the parts after. This will frequently allay irritation, and produce refreshing sleep.

It sometimes happens after scarlet fever, when all apprehension from the disease has ceased, that a child will be seized with convulsions, followed by an alarming state of stupor or insensibility. These attacks are frequently preceded by giddiness, nausea, or vomiting. The head will be hot, the face flushed, the pupils of the eyes dilated, and the carotid arteries will beat powerfully ; whilst the rest of the body, the extremities especially, will feel cold and clammy to the touch.

It is a very common practice, when these symptoms show themselves, to have immediate recourse to blood-letting, either by opening the jugular vein or temporal artery, or by bleeding from the arm, and cupping. To this practice, however, I cannot assent, having, in more than one instance, known it to have been attended with fatal results. It is true that sensibility usually returns quickly when blood is taken, and that all the appearances of the sudden congestion of the brain vanish ; but the

state of prostration of the vital powers which succeeds is truly alarming. It ought to be remembered that the blood has undergone great changes during the progress of this fever, that the proportion of serum over the crassamentum is greatly increased, and that in this state of the vital fluid, the body always displays a proportionately diminished energy; and as congestions in vital organs arise from debility, and *want* of power in the system, as has been previously observed, it behoves us to pause, and well consider the pathology of this state, previous to adopting a presumed remedy which is attended with so much danger.

It is undeniable that in this state there is a “determination of blood to the brain;” or, in other words, that the brain is in a congested state. There are also all the usual symptoms of apoplexy, for which disease, in one of its varieties, bleeding is considered, and very justly, the most proper and efficient remedy.

It may be interesting and important to trace how far the insensibility, or coma, which sometimes succeeds scarlet fever, is analogous to the same affection in the sanguineous form of apoplexy, and to examine whether the treatment which is so peremptorily demanded for the cure of the latter, can with any show of reason or safe practice, be adopted for the cure of the former.

Apoplexy has been divided into numerous kinds,

according to the exciting causes which produce it ; but, for our purpose, it will be sufficient to consider the two grand divisions, viz., the sanguineous and serous, which alone bear on this point.

In sanguineous apoplexy, the symptoms are suspension of all the powers of sense and motion, accompanied with stertorous breathing ; flushed and sometimes livid countenance ; immobility of the eye and dilated pupil ; foaming at the mouth ; and grinding of the teeth.

The predisposing causes are plethora ; intense study ; suppression of accustomed evacuations.

In serous apoplexy the predisposing causes are, a debilitated state of the body ; depressing passions of the mind ; much study ; poor living, &c. It is observed that individuals of the leucophlegmatic temperament, with a tendency to dropsy, are more particularly liable to this form of apoplexy. This temperament is known by the pale colour of the skin, a flabby condition of the solids, and a redundancy of serum in the blood.

The treatment in sanguineous apoplexy is bleeding largely from the jugular vein and temporal artery ; application of leeches and cupping-glasses ; drastic purges, &c.

The treatment of the serous is directly the opposite of this, (except as regards drastic purges ; ) and consists in the administration of diffusible stimulants, such as ammonia, castor, assafoetida, valerian,

&c. ; sinapisms to the feet ; electricity, &c. Blood-letting is strictly prohibited.

A comparison between the very opposite states of the system in which apoplexy occurs, will readily show the most probable form which it is likely to assume after a disease so debilitating in its effects as scarlet fever ; and the conclusion thence deduced will point out the treatment which ought to be adopted for the cure of apoplectic affections when occurring in the latter case.

The convulsions which usually accompany coma after scarlet fever, are the strongest evidence of the diminished power of the brain ; the blood that is drawn is invariably watery, and the heat very small ; in fact, such a state prevails, that if it occurred in any other disease than this, no well-educated practitioner would consider himself justified in prescribing blood-letting as a remedy. It has been previously stated that the symptoms of oppression are relieved, for the time, by bleeding ; and it is on account of this temporary benefit that the practice obtains credit ; but I unhesitatingly assert that these cases frequently, after a longer or shorter period, terminate fatally, from the production of some form of disease consequent on debility, owing to the loss of blood ; and even when death does not take place, years may elapse before the constitution, if originally good, recovers its former strength.

The successful treatment of this form of disease

will depend upon its being viewed as a form of serous apoplexy, arising from diminished powers of the brain and nervous system generally, with failure in the vigour of the circulation, owing to the want of that healthful stimulus which healthy blood alone can convey to the heart and other vital organs.

The convulsions, in themselves, are not to be regarded as the most alarming symptom ; they appear to arise from an effort of nature to restore vigour to the circulation ; for after they have subsided for a time, the heart always appears to beat with greater power ; and the pulse, which in this form of the disease is oppressed and weak, rises. Although the face and head are hot during this period of excitement, yet when it has subsided, the pallor of the countenance is remarkably striking.

There is always great derangement in the secretions previous to these attacks ; for such derangement being a powerful exciting cause of irritation in the system, the brain becomes sympathetically affected ; its powers of resistance for the time being impaired.

The immediate treatment required is to place the child in a hot bath, which is made stimulating to the skin by the large addition of mustard or salt, and then to pour from a height a continuous stream of cold water direct upon the head, taking care that it does not enter the bath. Consciousness, generally

will speedily return; and if there be sickness, it will as soon subside. A strong aperient, according to the age of the child, composed of calomel, scammony, and jalap, should be administered whilst it is in the bath: and if this aperient does not operate, it should be followed, in two or three hours, by a draught of the following kind. R. Infus. sennæ ʒx.; Mag. sulphat. ʒij; Mannæ ʒij; Spt. am. arom. ʒss.; Tinct. card. comp. ʒiss: Ft. haustus. For a child of ten years.

When these medicines have duly operated in producing a thorough evacuation of the bowels, it is then necessary to administer opium, in combination with camphor, in order to allay irritation, and prevent the return of the convulsions. When this has been effected, the subsequent treatment should consist in the administration of light tonics, in order to restore the vigour of the system, due regard being paid to the state of the bowels.

In scarlet fever, it is in the tonsils that violent inflammation is most apt to occur, and when this inflammation has proceeded unchecked, and matter has formed in the body of the tonsils, "a quinsy" is the popular term for the disease. The tonsils are not strictly glands, but are the continuation of the mucose membrane, consisting of a collection of follicles, which display a great extent of mucose surface in a small compass; hence the suddenness of the great degree of inflammation which is seen to arise in them.

It will be found that those who are most liable to affections of the throat, are persons of a relaxed state of fibre, in whom the mucose membranes, generally throughout the body, are liable, from slight exciting causes, to take on diseased action; and though such persons frequently have the appearance of robust health, yet they are more speedily weakened by attacks of disease, than those in whom the muscular fibre is more rigid, although to ordinary observation the latter do not appear to possess so vigorous a constitution.

The propriety of treating affections of the throat which, to appearance, are of the most inflammatory kind, upon a stimulant and tonic plan, was first pointed out to me by an eminent practitioner. In numerous instances I have had occasion to remark the rapidity of cure which has followed this method of treatment, not only in children, but also in adults; and frequently have noticed the quickness with which the progress of the disease has been checked, when, to all appearance, it was hastening to an unfavourable termination. The knowledge of the beneficial consequence of this mode of treatment of the ordinary affections of the tonsils, has been to me of the highest value in treating the severe affections of those organs incidental to scarlet fever: the success, indeed, which has attended it, has, in my mind, deprived the disease of half its terrors.

In the worst cases of affections of the throat, not

only are the tonsils inflamed, but the adjacent parts, as the uvula, pharynx, and fauces, are also found to assume the same character of great swelling and redness; and frequently the enlargement is so great, that the patient is in danger of suffocation.

When there is a disposition shown to the formation of matter in the tonsils, the administration of sulphate of quinine, with dilute sulphuric acid, and infusion of cascarilla, or camphor mixture, either rapidly restores the parts to their original size, or causes a more favourable and energetic formation of the abscess, and consequent termination of the disease.

The fulness and great enlargement of the tonsils, —frequently sudden,—may be speedily reduced if a linseed-meal poultice, as hot as can be borne, be applied to the throat. The difficulty of breathing produced by the enlargement will, generally, soon yield; but if it should continue, a stimulant embrocation will be most likely to afford relief.

In the severe inflammations of the throat, there is always shown a tendency to rapid exhaustion and debility, after the first excitement occasioned by the inflammatory fever has subsided; and in slight cases, a return of the disease is frequently threatened; more especially if the powers of the system are lowered by the application of leeches, or abstraction of blood in other forms.

The medicine most suitable to control this dis-



ease is the following:—the prescription is for an adult. *R.* Sulphatis quininæ gr. ij. vel iij.; Acidi sulphur. diluti ℥x. vel ℥xv.; Tinct. humuli ℥j.; Syrup. aurant. ℥j.; Misturæ camphoræ vel decoct. cinchonæ, vel infusi cascarillæ 3x: Ft. haustus. To be taken every six hours. The throat is to be well rubbed for ten minutes twice a day with the following liniment. *R.* Liniment. camphoræ comp. ℥iss.; Tinct. cantharid. ℥ss.

It matters not whether the affection shows itself in the first instance, attended with symptoms of urgent fever, or whether the disease presents the characters of putrid sore throat without urgent fever,—the same principle of treatment, with the necessary variations according to age, &c., ought to be adhered to. The chief difference consists in enforcing the greater amount of nourishment and stimulants in the putrid form, which is not required in the inflammatory.

It sometimes happens that sudden œdema or swelling will take place in the tonsils, uvula, and soft palate, in persons who are subject to sore throat. The swelling will be so great as to produce feelings of instant suffocation, and the patient will usually be found bending forward, afraid to raise the head for fear of this result taking place. There seems a total incapacity of swallowing, even the saliva, and on examining the throat, the tonsils appear to meet and do not present that appear-

ance of redness common to the more usual inflammatory affections of these organs. I know of one instance in which death took place from this cause, whilst the patient, a delicate female, was in bed, and supposed to be asleep. This state of things requires instant relief, and no remedy answers this end more quickly and effectually than great heat applied to the throat. A large poultice of linseed-meal applied, as hot as it can be borne, around the throat, is most likely to give speedy relief. The after treatment must be conducted on the principles just detailed.

When dropsy occurs as a sequela of scarlet fever the urine is commonly albuminous. It is also very frequently of a deep brown colour, like coffee; and this appearance may be considered as indicating the necessity for calomel purges, and refrigerating medicines. As the water loses this unnatural colour, so do the dropsical swellings vanish.

## CHAPTER IX.

## SMALL-POX.

No writer has described the symptoms of small-pox with greater accuracy than Sydenham. The disease, as it appeared in his time, is still in all particulars found to remain the same; and the treatment which he recommends may be pronounced, with certain modifications as far as children are concerned, the most judicious that can be adopted. I shall, therefore, first present the reader with Sydenham's description, before giving any observations of my own.

“ The small-pox is of two kinds; the distinct and confluent. The distinct kind begins with chilliness and shivering; great heat; and a violent pain in the head and back; vomitings; a considerable tendency to sweat in grown persons, whence it may be conjectured that the small-pox will not

prove of the confluent kind ; a pain under the scrobiculum cordis, or pit of the stomach, upon pressing it with the hand ; drowsiness and stupor sometimes ; epileptic convulsions, especially in children, which, happening after dentition, one may foretel that the small-pox is just approaching ; so that, for instance, supposing a child be seized with a convulsive fit over night, a kindly small-pox will appear next morning, and very rarely of the confluent sort.

“ 2. On the fourth day inclusive, from the beginning of the distemper, sometimes later, but seldom earlier, the eruptions come out, at which time the symptoms abate or go off entirely. At first, reddish pustules as large as the head of a small pin appear, scattered up and down the face, neck, breast, and the whole body, and at the same time a pain seizes the fauces, and increases proportionably as the eruptions fill.

“ 3. About the eighth day from the first seizure, the spaces between the pustules that appeared white before, begin to grow red, swell, and are painful ; the eyelids are distended so as to close the eyes, and resemble an inflated bladder. Next after the face, the hands and fingers swell, and the eruptions on the face, that till this day were smooth and red, now grow rough and whitish, (which is the first sign of suppuration,) and discharge a yellow matter, in colour not unlike honeycomb. The in-

flammation of the face and hands, being in meantime come to its height, renders the spaces between the eruptions of a florid red colour, resembling that of damask roses; and the milder the small-pox is, the nearer do the eruptions and their intermediate spaces approach this colour. The pustules on the face grow every day rougher and yellower as they suppurate, while those of the hands and other parts appear smoother and whiter.

“ 4. On the eleventh day the swelling and inflammation of the face vanish, and the eruptions being come to their due maturity and size, equaling that of a large pea, dry and scale off. On the fourteenth or fifteenth day they disappear entirely, but those of the hands being more stubborn, and yet white and fresh, continue a day or two longer, after which they burst; and those of the face and body scale off, and in the face are succeeded by pits, or pock-marks.

“ 5. The patient is either quite costive, or hath few stools, throughout the whole course of the disease. Most of those whom this distemper kills, die on the eighth day in the distinct kind, and on the eleventh in the confluent: for when the sweat is promoted in the distinct sort by cordials, and a hot regimen, the face, which on the eighth day ought to swell, and be inflamed in the spaces between the eruptions, on the contrary, appears whitish and sunk, whilst the pustules, notwithstanding, con-

tinue red and plump, even after the death of the patient. The sweat which flowed freely to this day ceases suddenly, and the patient in the meantime is seized with a delirium, restlessness, sickness, and frequency in making urine in small quantities, and in a few hours expires.

“ 6. The confluent small-pox is accompanied with the same symptoms, but they are more violent: the fever, for example, restlessness, sickness, and vomiting, &c., rage more severely, but there is less tendency to sweat than in the distinct kind. Sometimes a looseness precedes, and lasts a day or two after the eruption, which it scarce ever does in the distinct kind. The eruption in this sort of small-pox happens on the third day, or earlier, but seldom later, and the sooner the pustules come out, the more they run together. Sometimes, however, the eruption is retarded to the fourth or fifth day, by some violent symptom; as, for instance,—a sharp pain in the loins, resembling a fit of the stone; in the side like a pleurisy; in the limbs like a rheumatism; or in the stomach, accompanied with great sickness and vomiting. The confluent sort differs from the distinct in this, that the symptoms do not abate immediately after the eruption, but the fever and its concomitants afflict the patient for several days after. Sometimes the pustules come out like an erysipelas, and sometimes like the measles; but they may be readily known from

both by the time of the eruption. In the progress of the disease, the pustules do not come to any considerable bigness, but run together in the face and cover it like a red bladder, and make it swell sooner than in the distinct sort; at last they appear like a white pellicle, closely adhering to the face, and rising a little above the skin.

“ 7. After the eighth day this pellicle grows every day rougher, and inclines to a brown colour; the skin is tenderer, and in the worst sort of confluent small-pox falls off in large scales, but not till after the twentieth day.

“ It is worth observing, meantime, that the nearer the pustules, as they suppurate, incline to a dark brown colour, so much the worse they are, and the longer in falling off; but the yellower they are, the less they run together, and the sooner they vanish.

“ 8. When the pellicle falls off, the face appears smooth, but is soon succeeded by branny scales, of a very corrosive nature, which leave large pits, and frequently seams behind them. Sometimes the skin of the back and shoulders scales off. The danger of the disease is to be estimated by the number of the eruptions upon the face only. Those of the hands and feet are larger than those of the other parts, and the nearer they approach the trunk the less they are.

“ 9. In grown persons, a salivation, and in children a looseness, (though not so certainly,) accom-

panies the confluent kind. The salivation sometimes begins with the eruption, and sometimes not till two or three days afterwards. At first, the matter is thin, but on the eleventh day it grows more viscous, and is raised with great difficulty. The patient is thirsty, and seized with a hoarseness, great stupor, and drowsiness, coughs between whiles as he drinks, and the liquor flies out at his nostrils. At this time, the salivation generally stops, which, if it were not supplied by the swelling of the face, and the swelling of the hands, now manifestly beginning, and lasting longer than the former, would immediately destroy the patient. For though the swelling of the face, according to the nature of the disease, ought to abate a little on this day, yet it should not sink entirely till a day or two afterwards. The looseness does not attack children so soon as the salivation does grown persons." \*

There is a form of small-pox which occurs after vaccination, and is called modified small-pox. The extreme mildness of the symptoms which usually present themselves, and the similarity of the eruption to chicken-pox, have induced many to believe the two diseases to be identical.

The progress of the eruption in them, is, however, different. In modified small-pox, the pustules do not usually begin to fade and die away until the fourth day; although I have seen this take place

\* Sydenham's Works, vol. ii. p. 423. Edit. 1788.



as early as the third. The pustules are well defined, and there is more areola around them than in chicken-pox.

In chicken-pox the pustules are of larger size, more irregular in shape ; and some will frequently be found to change their character the day after they have first appeared, turn yellow, and begin to dry up. Modified small-pox is common to all ages. Chicken-pox is a disease peculiar to children.

In an eruptive fever, such as small-pox, it cannot be matter of surprise that the symptoms of constitutional irritation should frequently be found very severe. This is known to be the case, when restlessness, moaning, and crying, tossing the arms and legs about, are found to exist. If these symptoms are allowed to continue uncontrolled, a state of unconsciousness soon shows itself ; congestion, from debility and exhaustion, will take place in the brain, and a fatal termination to the disease rapidly approximate.

Sydenham's advice in the treatment of small-pox, " to take away blood upon any of the first three days," is rarely safe in the cases of children. We can never calculate upon the subsequent exhaustion which may follow the practice, nor the rapidity with which fever of a low character may be induced.

He advises an emetic at the outset of the disease. This is generally attended with good effects ; but

should not be administered if there is much pain at the pit of the stomach. An aperient should then be substituted for it: a small dose of calomel, followed by a warm black draught,—or to an infant, a few grains of Scam. cum cal. according to the age.

The air should be cool and pure in the chamber where the child lies, and the body not heated by too many bed-clothes.

Cool acidulous drinks, as lemonade, or tamarind water, should be allowed for the common beverage.

The fever which attends small-pox is to be treated on the principles which guide us in the management of other febrile diseases, with this difference,—that owing to the greater amount of irritation, from the extensive nature of the eruption, we are called upon to administer opiates more frequently, to allay the irritation and restlessness peculiar to certain forms of the malady, more especially in infants.

Sydenham does not consider opiates so advisable for children as for adults, as they would have the effect of stopping the diarrhœa. But a diarrhœa is not always found to exist; and if it should, it is right to moderate its effects, and allay the irritation which it produces in the system, when allowed to proceed to too great an extent. Whenever restlessness is found to prevail, opium in some form should be administered, whether diarrhœa be present or not.

If sickness should exist, a draught in a state of effervescence,—if the child is of an age to drink it—should be given, with a few drops of laudanum, every four hours, until it ceases.

If the bowels are confined, five grains of the compound Scammony c. cal. gr. v. should be given occasionally.

If the fever assumes a low, or typhoid character, tonics should be given. The decoction of bark, with sulphuric acid, wine, æther, &c. &c.

In all cases where there is a great tendency to sweat after the eruptive fever has subsided, a cool regimen will be especially necessary.

When the eruption suddenly recedes, or the pocks sink and become very much dimpled, and alarming symptoms supervene, such as rigors, convulsions, or delirium, recourse must be had to wine, opiates combined with æther and camphor, blisters, and sinapisms.

The degree of fever in small-pox is usually in proportion to the amount of the eruption; and according to the strength of the fever which occurs in the first stage, so is the depression produced by it in the middle and latter stages of the disease.

Sometimes, in persons of weak constitution, both adults and children, the fever and pulse will be found very high, and the thirst great; and considerable disturbance in the functions of the brain, indicated by muttering, delirium, a half-dozing, or

semi-consciousness, will show itself. In this state there is a difficulty of swallowing, and a sensation of dryness in the throat, accompanied with great thirst. In a short time the tonsils will be found to suffer from inflammation; and ulceration will speedily follow. These symptoms will all show themselves during the period in which it is necessary to adopt the antiphlogistic treatment, and even during the course of such treatment. The inflammatory affections of the soft parts of the throat are to be taken as evidence of debility in the system.

The farther progress of these symptoms will be immediately arrested by the adoption of the treatment for the cure of sore throat, previously mentioned in the chapter on Scarlet Fever, page 159.

To illustrate the efficacy of this mode of treatment for the cure of inflammatory affections of the throat occurring in small-pox, I will relate a case of a gentleman of feeble constitution, who laboured under this disease in its distinct form, with the eruption diffused over his whole body.

The symptomatic fever had continued very high for some days; there was great restlessness; incessant thirst, and partial delirium. The eyes were suffused, and red, and the light was annoying to him. During the existence of these symptoms he complained of sore throat, attended with much difficulty of swallowing. His pulse at this time

was 110. On examining his throat internally, the tonsils were found to be of large size, and of a deep red colour. Notwithstanding the amount of fever, heat of skin, and quickness of pulse, I gave him the following medicine.

℞. Decoct. cinchonæ ℥vi.

Tinct. ejusdem 3ij.

Acidi sulph. diluti ℥xl.

Essentiæ camphoræ ℥xl.—Fiat mistura.

The fourth part to be taken every six hours.

As he was restless at night, and deprived of sleep, he took, in addition to the foregoing mixture, a draught at bed-time, containing five minims of Battley's solution of opium. His diet consisted of beef-tea, and bread and milk.

He pursued this plan, (with occasional aperients,) and recovered without a single unfavourable symptom subsequently intervening.

## CHAPTER X.

## CONVULSIONS, AND INFLAMMATION OF THE BRAIN.

IT is in children of nervous temperament, who are easily excited, and display more than usual sensibility, that convulsions are most frequently witnessed. The power of resistance to attacks of disease originating in irritation is much less in them than in children of phlegmatic temperament. Irritation resulting from painful dentition is the most common exciting cause of convulsions in children; for we find that as they grow older, and after the first set of teeth are cut, convulsions become much less common. When convulsions occur during the process of teething, it will generally be found that sufficient attention has not been paid to the child while suffering from the prolonged irritation kept up in the system at that period; and that from this cause the powers of the stomach have become impaired, and offensive secretions have accumulated

in the bowels. I have noticed a copious deposit of lithic acid in the urine,—sometimes to so great an extent as to cause the nurse and parent to believe that the child had passed blood,—as one of the premonitory symptoms of convulsions, and of a tendency to effusion of water within the brain. This peculiarity, which originates in imperfect digestion, should always be carefully noted.

The necessity of attending to the state of a child's gums, as one means for preventing convulsions, cannot be too often or too urgently enforced. If once a child has had an attack of this form of disease, there is always shown a tendency to a return of it. Such return may be totally independent of any irritation arising from dentition, and may proceed from sudden fright, passion, violent crying, &c.

Convulsions in young infants will frequently arise from the milk of the mother being of an unhealthy quality, and unsuited to its delicate stomach. A striking illustration of the truth of this remark came under my own observation. I attended a lady of nervous temperament, gifted with a mind capable of advising her husband on matters of business of an important character, and which he never failed to avail himself of, even when she was confined to her room in consequence of child-birth. This did not appear to affect her health; but it operated injuriously on the child,

as the sequel will prove. The first time I put her to bed, I knew nothing of this. The child was born hearty and strong ; but at the end of a week it was seized with convulsions, without my being able to assign any cause for them. It died. The second time I attended her in her confinement, convulsions again occurred at the same period, and this child also died. I now examined her milk, and found that it had more the appearance of cream than of the pale blue fluid which is indicative of its being in a healthy state. I told this lady that if ever she had another child, she must not think of nursing it herself. This she agreed to, and when I put her to bed a third time, a nurse was engaged to suckle the child. This child has never had any attack of convulsions ; it is now two years old, and is remarkably strong and healthy. I ascribe the deterioration of the mother's milk entirely to her anxiety of mind.

We frequently meet with convulsions in children who are suffering from the effects of debility, and in whom the countenance is observed to be pale, the skin almost transparent, and the circulation languid, the blood being evidently of a watery consistence, and deficient in red particles. In these cases, the brain appears to suffer from the deficiency of nervous energy, which healthy blood alone can restore. The feeble action of the principal vital organs, consequent on the languid circulation



of the impoverished blood, appears to induce this form of disease. Very slight causes of irritation are sufficient in themselves to produce an attack of convulsions in infants whose vital powers are of this low order.

When offensive secretions are retained in the bowels, the brain is very apt to become sympathetically affected, and convulsions are likely to supervene. The symptoms are, heaviness of the eyes, drowsiness, more or less fever, and a very characteristic *blueness of the tongue*. A brisk purgative, composed of Calomel gr. ij. ; Jalap gr. vj., is nearly all that is required to remove this state of oppression.

The injudicious and too hasty cure of cutaneous diseases which have long existed will frequently prove an exciting cause of convulsions.

Convulsions sometimes occur after scarlet fever, when proper attention has not been observed in purging the child, in order to prevent congestion of any of the vital organs ; also during the progress of small-pox ; and in measles, when the eruption has from any cause experienced a check.

“ Convulsions are sometimes hereditary in families where no peculiar formation of the head, nor any evident disposition to other disease, is to be detected. The knowledge of this fact is always worthy of our attention. Astruc and Harris re-

commend us, when we are aware that several children in the same family have fallen victims to convulsions, to administer more active purgatives for the purpose of evacuating the meconium; to pay the strictest attention to diet; and carefully to avoid the application of either external or internal stimuli. I am not aware that we can do more than adopt this precautionary plan. In such cases it will be doubly necessary not to permit the powers of the mind to be drawn upon by too early an attention, even to the most trifling studies." \*

The following instances of the beneficial effects of a blister in preventing convulsions have come to my knowledge.

The first two children of a lady (now the mother of a large family) died from the effects of convulsions soon after their birth. It was recommended that a blister, the size of a crown piece, should be applied at the back of the head to any future children she might have, immediately after birth. This plan has been adopted in every instance with the most successful result; not one of the children to whom it has been applied ever having had an attack of convulsions.

Infants of a few months old, who have been reduced to a state of debility from any source of con-

\* North's Observations on the Convulsions of Infants, p. 195.

tinuous irritation, either in the lungs, bronchi, stomach, or bowels, causing impoverishment of the blood, are very liable to attacks of convulsions, which are usually preceded by the following symptoms.

The neck becomes rigid; and when the stiffness subsides, the head shakes from side to side; the throat is pushed forwards; the hands and arms shake; the pupils become dilated, but, on application of a strong light, contract. The tongue is dry, and the child is thirsty; but seldom retains what it swallows. During the rigidity of the neck, the thumbs are bent in upon the palms. The motions smell sour, and are confined in appearance. Upon the earliest appearance of any of these symptoms, the nurse must be changed without delay. A fresh breast of milk must be substituted, and if that cannot be procured, asses' milk should be given to the amount of a pint and a half during the day, the stomach being first quieted by the administration of five to ten drops of Spt. am. arom. with sy. croci in a little water, and from half to one drop of laudanum every two or three hours. If this should fail to answer the purpose, half a drop to a drop of hydrocyanic acid should be given, which will seldom fail in removing the sickness.

Effusion within the brain will speedily take place unless those symptoms are early combated. When

effusion has occurred, the treatment to be adopted should consist in the persevering administration of ammonia; the strength being at the same time supported with asses' milk. The convulsions which arise must be subdued by sedatives in combination with the above medicine. The warm bath is not admissible in these cases, as it is likely to increase the debility.

Convulsions are to be regarded as arising chiefly from causes which produce irritation in the brain and spinal marrow. From the irritation produced in these organs by teething, over-feeding, improper diet, acidity of the stomach, strong mental emotion, the nervous energy, so necessary for the correct performance of the different functions of the body, becomes impaired, and is lessened in intensity, either by slow and imperceptible degrees, or by a sudden shock, as from an overpowering blow, which at once deprives the brain of its sensibility, and occasions spasmodic action of the most violent kind in every muscle of the body.

“Convulsions in children,” says Dr. Copland, “are frequently produced from the effects of irritation upon a portion of the organic nervous circle, which extends to corresponding ganglia, and is thence reflected upon the fibriles of grey nerves supplying other viscera, or upon those communicating with the roots of the cerebro-spinal nerves,

occasioning either altered sensibility, or extreme pain in the extremities of the nerves of sensation, or spasmodic or uncontrolled movements of the voluntary muscles, through the medium of the nerves of motion. The convulsive affections of children are frequently thus produced, *without any disease of the brain* ; although the circulation in this quarter generally is affected in the course of the convulsion, owing to the disorder of the respiratory processes attending it, and to the impeded passage of blood through the lungs and heart." . . . "The irritation of worms in the intestinal mucous surface gives rise not only to various painful and spasmodic states of the canal, and to palpitations of the heart, or of the abdominal aorta, but also to convulsion and spasm of voluntary muscles." \*

The return to sensibility after an attack of convulsions may be either complete or partial, according to its severity or mildness, the nature of the disease, and the constitution of the child. Paralysis of one side, one arm, or one leg, may remain from the injury inflicted on the nerves supplying the muscles of these parts ; and effusion of fluid may be produced within the ventricles of the brain. The best means that we are acquainted with for ascertaining this latter state, is afforded by the appearance of the pupil of the eye. If the eye looks

\* Copland's Dictionary of Practical Medicine.

glassy, vacant, and staring, and *the pupil be considerably dilated*, there is reason to believe that effusion has taken place.

If, on the contrary, there be insensibility, stupor, and coma, more or less complete, and the pupils, instead of being dilated, are found of the natural size, or even contracted to less, it may be safely concluded that the apparently alarming symptoms proceed from the influence of irritation, and that no effusion has taken place in the brain.

A corroborating sign of effusion is found at the top of the head in the fontanelles being distended to a greater size than in health, and the membrane covering the brain at this part appearing to project in consequence of the congestion or distension of the brain beneath.\*

\* An instance of considerable interest, relative to the cause of idiocy, occurred to me a few months ago. Six months after putting a lady to bed, of, to all appearance, a healthy well-formed child, I was sent for to see the infant, who was unwell. I had not seen it since its birth. I was struck by the remarkable vacancy of the child's look, and made inquiries of the mother relative to this circumstance. She appeared to evade my questions, which seemed to give her pain. I took off the cap from the child's head, and felt for the fontanelles; but there was nothing to be discovered but *solid* bone. On alluding to this, the mother said the head had never been "open;" but appeared closed from its birth. The top of the head was conical, and the forehead receded suddenly.—The cause of this lady feeling conscious of the infirmity of her child, arose

In the treatment of convulsions, it is of the utmost importance not to attempt to do too much at one time for their cure. The causes which have been operating to produce this form of disease, have, in most instances, been long silently exerting their baneful effects, and the shock of severe remedies at too early a period, may produce more injury to the system than the convulsions themselves.

When an attack of convulsions has shown itself for the first time in a child, the most prudent plan is to wait until the convulsive action shall have subsided; though, in the mean time, the child should be placed in a warm bath of  $96^{\circ}$  or  $98^{\circ}$ ; and if the head should feel hot, and the face flushed, cold vinegar and water should be poured on the head while the child is in the bath.

When the convulsions have subsided, the causes which may have produced the fit must be investigated, in order that suitable remedies may be applied to prevent a return.

from her having had a previous child,—now a strong girl of ten years old, but quite idiotic,—whose head was formed in the same manner. When measuring the head of the infant, I found that by allowing an inch for the ordinary separation of the bones at the top of the head, the facial angle would only then be equal to that usually observed in the heads of sane children. This child is now more than a year old, and has no use in its hands or legs, and expresses its feelings by a peculiar sound, quite different to other children, and is quite idiotic. There are four other children in this family who are no wise deficient in intellect.

If the child is under three years of age, the first thing should be to examine the gums. These, in young infants, will, most probably, require lancing, as it has been previously observed that convulsions in them almost invariably spring from irritation in these structures. We are not to content ourselves by hastily deciding that there is no necessity to use the gum-lancet, because we observe that the points of the teeth are protruding through the gums. It is frequently observed that two, three, or more of the double teeth having advanced a little above the surface, from some cause or other, proceed no further, but act as powerfully in producing irritation in the brain, as if they had never cut through the gums. These should be freely lanced. It is always prudent to gently scarify the gums in a child under sixteen months old, who is the subject of convulsions, either when an attack is anticipated, or after the convulsion has passed away,—even when the gums have not appeared to be suffering from irritation.

The next step is to examine the tongue, and to inquire into the state of the bowels. If they are confined, which is usually the case, a *decided* dose of aperient medicine should be given: a powder, composed of two grains of calomel and six of powdered jalap, for a child a year old. This generally occasions a discharge of offensive fœces. If the child be feverish, and fat children usually are, a dose of



febrifuge medicine, composed of the bi-carbonate of potash and lemon juice, should be given every four or five hours. If restlessness prevail, two or three drops of laudanum, or two or three grains, according to the age of the child, of Dover's powder, may be given at night; this, of course, requires that the aperient medicine should have previously acted.

If disorder of the digestive organs, coupled with derangement of the liver, appear to have produced the convulsions, a mild alterative medicine must be had recourse to, in conjunction with those of an antacid nature; and the subsequent treatment should consist of light tonics. The diet should be light and nutritious: every thing having a tendency to produce flatulence should be strictly prohibited. The treatment, indeed, is now referable strictly to the cure of indigestion, and according to the success with which this is managed, is the liability to a return of convulsions lessened.

The affusion of cold water cannot be too highly extolled in arresting the further progress of a convulsive fit, and in rousing a child from a state of coma. The body should be placed in a warm bath, and the head subjected to a free shower of water poured down upon it. Sickness is frequently a symptom attendant upon convulsions when the brain is suffering from oppression. When no medicine can be kept on the stomach, the affusion of cold water on the head, from the effect it produces

on the brain, will often have the effect of tranquillising the stomach, and of enabling it to retain the necessary medicines.

The affections of the brain in children are more frequently observed to arise from irritation than inflammation. The symptoms indicative of the two states are so much alike, that the best writers are found to be at a loss in determining the distinguishing marks or signs of each. Drs. Evanson and Maunsell in their excellent work on the "Diseases of Children," say, in reference to this subject, "We must often, however, expect great difficulty in ascertaining, in any particular instance, whether convulsions, or symptoms of irritation of the brain, or of the hydrencephaloid disease, are purely functional, or must be referred to organic lesion. Whenever doubt exists, it will probably be encountering the least hazard to consider that the latter is present." My own experience, however, leads to a different conclusion. The safer plan is to treat a doubtful case as having its origin in irritation, producing functional derangement. One great point is gained by adopting this method, which is the preservation of the strength of the child; for when the symptoms are considered to have their origin from inflammation of the brain or its membranes, the treatment usually prescribed comprises the most decidedly antiphlogistic measures, such as bleeding, leeches, and calomel. A

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child may never be able to rally from the effects of this treatment; sudden effusion of fluid within the ventricles of the brain may take place, and the power of absorption be destroyed, owing to the diminution of vital energy which the system has experienced. The debility thus induced may render the child peculiarly liable to diseases which proceed from sluggish circulation of the blood, and more particularly in the glandular structures.

Congestion of the brain is a very common disease in young children who have suffered from convulsions, improper diet, painful dentition, and other sources of excitement and irritation. It is when the excitement dependent upon these causes has been of a powerful nature, that the circulation of blood in the brain becomes imperfect; and the symptoms witnessed are more or less alarming, according to the length of time which the excitement has prevailed.

The symptoms characteristic of irritation are always found to exist previous to an attack of congestion of the brain. These symptoms are restlessness, fever, sometimes constant sickness, crying, indifference to objects which formerly gave pleasure, and dislike to food. After these have continued for a few days, the child, should an attack of convulsions not occur, will generally manifest more or less unconsciousness; it will not recognize its parent or nurse; the pupils of the eyes will have become

dilated, and knowledge of surrounding objects will be lost. The child will now cease to cry, but occasionally will moan feebly, and will frequently fetch a long-drawn sigh.

It is of the greatest consequence to subdue the excitement and restlessness when a child has betrayed symptoms of oppression or congestion of the brain. Unless this be done, and so as to spare the strength of the child, effusion is almost certain to follow. The high state of excitement is seldom of long duration, (the nerves of an infant's body will not admit of that;) and in proportion to the degree of excitement, so is the depression by which it is succeeded. There frequently will be found a cessation of the excitement, for longer or shorter intervals, usually terminating in convulsions; and each attack will be observed to become more and more feeble, until the child is completely exhausted, and lies in an apparently torpid state, without sense or motion.

The order of symptoms observed, previous to effusion occurring within the brain, may be divided into three stages. The first comprises the symptoms dependant on the various exciting causes of irritation in the system, such as teething, indigestion, &c.

The second stage has arrived when the evidences of the first have become marked to a certain extent, by fever, great restlessness, brightness of the eyes,

thirst, dry mouth, the tongue either furred or very white, which it most frequently is, and the pulse strong and rapid.

The third stage occurs when the symptoms noticed in the second have produced the effects of exhaustion in the system. There is no longer the same kind of restlessness nor fever, and the child generally lies apparently inanimate.

Thus these stages may be termed :—First, the stage of irritation ; second, the stage of excitement ; third, the stage of depression or exhaustion.

The treatment of the first stage is usually of a very simple nature. It consists in removing the cause or causes of irritation which are found to exist, and which, if allowed to continue, will exert a progressive and cumulative influence, ending in convulsions and effusion. The gums are to be examined, and if at all swelled, are to be lanced. A decided dose of aperient medicine is to be administered, and particular attention paid to the nature of the child's aliment. If the child is being partially fed and nursed at the breast at the same time, the former must be withheld for a time until the stomach has recovered its tone. If the milk of the mother from any cause, as mental anxiety or ill health, is suspected to be of an unhealthy or irritating character, or deficient in quantity, a wet nurse should be procured.

If the child is weaned, a rigid system of dietary

should be adopted. Nothing but what is light, nutritious, and easy of digestion, should constitute the ordinary articles of food. No food of a solid kind ought to be given; and this should be a general rule, until children have cut some of the double teeth to enable them to masticate this description of food. Beef-tea as the staple article of nourishment, when carefully prepared, I have found to answer best, and this should not be given every day, (unless the child is of a weakly constitution,) but alternated with a light bread pudding, or other articles of a farinaceous kind. If the child is pale and delicate, the digestive organs may be invigorated by the use of mineral acids, the healthier look of the child soon showing the influence exercised by it, in the improved character of the blood and colour of the skin. *R. Inf. rosæ ℥i; Sy. papav. ℥i.; Acid. sulph. dil. ℥v: Fiat mistura.* Half twice a-day, for a child two years old. An occasional dose of castor-oil, when the child seems more than usually fretful and peevish, and the tongue is foul, will be attended with advantage; and if the appetite becomes impaired and the evacuations are of an unhealthy character, one or two grains of Hydrarg. cum creta, with four or five grains of powdered rhubarb, will restore the secretions to a healthy state.

The treatment of the second stage consists in subduing the irritation, fever, and restlessness, with the least possible expenditure of the strength of

the child. Unless this very important point is kept in view, the results are likely to be most disastrous. It is comparatively easy to prescribe medicines of great efficacy in subduing fever, but very difficult to preserve the system from the injurious consequences of such remedies.

When called in to see a child who exhibits the symptoms attendant upon the second stage, we are not immediately to conclude that it is suffering from inflammation of the brain, because the face is flushed, or very red, the eyes bright, and the head hot to the touch, with great restlessness and fever. We ought not to be misled in our endeavours to subdue this form of disease, by the alarming nature of the symptoms; for in a few hours these may probably present an appearance of considerable mitigation. Should we have recourse to bleeding for their removal, we should find on our next visit the fever indeed diminished, but the restlessness much increased; and the child would be abruptly hurried into the third and last stage of exhaustion, ending in effusion; or if effusion did not take place, so great a prostration of strength would probably ensue, as to render recovery long protracted and extremely doubtful.

In looking over several cases which I have known treated by bleeding or leeches, when the brain was suffering from congestion in infants, I am unable to point to one, in which the treatment was successful.

There was usually an abatement in the violence of the symptoms for a short period, when blood had been drawn, but they invariably returned with redoubled vigour ; and death appeared to be hastened by the use of blood-letting as a remedy.

The most effectual mode to combat the symptoms of congestion, is to allay the violence of the heart's action, and with it the fever and restlessness which prevail ; and this is soonest effected by the use of sedatives in combination with simple saline medicine, either in a state of effervescence, or not, according to the age of the child, paying strict attention to the state of the bowels at the same time. The use of opium, and other sedatives, is highly beneficial in affections of the brain. There can be no rational cause of dread in administering one of the numerous preparations of opium, when a child is tossing about in a state of insensibility, the head moving from side to side, and not lying still for a single minute. A little consideration will convince any unprejudiced person that the result of all this unnatural expenditure of strength must be complete exhaustion ; and that debility, inducing other diseases, will ensue, unless the exciting cause be removed.

The prejudices against the administration of opium seem to have arisen partly in consequence of deaths having occurred from the injudicious use of the drug, and partly in consequence of the bad



effects generally witnessed from its frequent administration, in small doses, to infants, under the form of soothing mixtures. It is not, however, to be inferred because opium exercises so baneful an effect upon the infantile constitution in certain states of *freedom from excitement*, that the use of it ought to be abandoned in other states where it is known to exercise a most beneficial influence, and to contribute more to the recovery of the patient than any other medicine that could, at the time, be administered.

The beneficial effects of opium are chiefly displayed in the power which it exercises in subduing a particular class of symptoms, proceeding from excitement; for until a subsidence has taken place of the restlessness, and more prominent symptoms of irritation, the administration of calomel, so often required, proves prejudicial rather than otherwise. Calomel is a stimulant when administered in small repeated doses, and certainly is not required when the active symptoms of excitement are present. It will never be found to allay excitement, until it has produced purging; and this result is to be much guarded against in the diseases of infancy, when the child is already too much exhausted.

When a child of eighteen months old is labouring under the symptoms of the second stage, with high fever, and great restlessness, a dose of aperient medicine should be first given; to be succeeded by

the following mixture. R. Bi-carb. potassæ gr. xv. ; Succ. limonis ℥ij. ; Sy. tolu. ℥ij. ; Aq. ℥ij. Ft. mist. A fourth part to be given every four hours. A powder, composed of Pulv. ipecach. comp. gr. i. ; Sacchar. gr. i., should also be given every four hours.

The child, most probably, after taking six of these powders, will be observed to become tranquil, and more conscious, especially if perspiration results from their administration ; and when once the fever is subdued in a child of this age, nature will generally perform the remainder of the cure unassisted, provided the symptoms have received early attention and been properly treated. Should, consciousness, however, be incomplete upon the subsidence of the fever, the powders must be abandoned ; and our attention should be directed to ascertain the cause of this state. This defect of consciousness may proceed from either of these two causes : first, from the enervation and debility produced by the severity of the disease ; secondly, from the effusion of fluid within the ventricles. The former I have found to be by far the most frequent, when the child has not undergone any severe and lowering treatment. The latter is most likely to occur when such a course of treatment has been pursued.

To restore the depressed energies of the system, ammonia may be given. The best preparation is the Spt. ammon. aromat., in doses of five to ten

drops, in some bland liquid, three or four times a-day.

In children of more advanced age, when oppression of the brain supervenes after the subsidence of the fever, and when the tongue is observed to be *dry*, the administration of small doses of calomel and James's powder will be attended with the best effects. Calomel gr.  $\frac{1}{4}$  to gr. ss. ; P. Jacobi ver. gr. ss to i. To be given every six hours. It is necessary to watch most narrowly the effects of this medicine, for if it be continued beyond the proper point, extreme exhaustion follows. The beneficial operation of it appears to result from the stimulus it gives to the liver. This organ is usually found engorged when the brain is affected, and it is from the efficacy of calomel in reducing such engorgement, that relief is experienced. We may know when the proper effect has been obtained from the appearance of the motions: they are then black, or green, and of a flocculent appearance.

The medicine best adapted to promote a speedy recovery, in children of any age after weaning, when the feverish symptoms have disappeared, is the following. R. Inf. rosæ  $\mathfrak{z}$ i. ; Acid. sulphur. diluti  $\mathfrak{m}$ v. ; Sy. rosæ vel papav.  $\mathfrak{z}$ j. ; Mag. sulph. gr. x. Ft. mist. The half twice a-day. This should be given for three or four days, preparatory to administering medicines of a more decidedly tonic character. The minute quantity of mag. sulph. appears to have

a deobstruent and stimulant effect upon the glandular system generally, and to improve the character of the secretions. When the tongue has become uniformly *moist*, and of a dirty white, like dirty macerated veal, quinine will be of the greatest benefit. From half a grain, to a grain, in six drops of dilute sulphuric acid, and a little syrup of orange-peel and half an ounce of water twice a-day, is a form well adapted for children.

The third stage has commenced when all excitement from fever has terminated, and, when oppression of the brain has supervened, either with or without effusion of water within the ventricles. The treatment of simple oppression without effusion has already been adverted to ; it now remains to point out the means for distinguishing the difference between oppression without effusion, and oppression resulting from effusion. The most certain indications of effusion having taken place in the brain are, as has been previously observed, permanent dilatation of the pupils, and insensibility of the retina. Though in states of great exhaustion, without effusion, it is not uncommon for the pupil to become dilated ; yet the eye, upon light being applied to it, will contract, thus showing that sensibility of the brain, though greatly impaired, still exists ; but when effusion has occurred, the pupil continues dilated, unaffected by the light, as the loss of sensibility is then complete.

A child in either of those states requires the same treatment. No strong medicines, such as calomel, are to be employed, in expectation of its causing an absorption of the effused fluid. I have never seen any advantage arise from the administration of mercurial preparations to infants, when in such a state. The case of effusion within the ventricles is always one of extreme danger; and very few children ever recover when it occurs after a severe attack of convulsions, with previous great excitement. From the chronic form of the malady, which is slow in its progress, without any previous great excitement, children more frequently recover. Such as are of a leuco-phlegmatic temperament, whose flesh is pale and flabby, blood poor and watery, and circulation languid, are most liable to this form of the disease.

There are no remedial agents from which we can expect an absorption of fluid when it is effused, excepting stimuli, with the assistance of nature. A healthy breast of milk should be procured, if the child is not weaned; but if it be weaned, the strength should be supported by good beef-tea, and asses' milk. The incapacity which the child usually displays for sucking and swallowing, contributes greatly to the fatality witnessed in this disease. In this last stage, unfortunately, but little can be done for the efficient support of the child. Our efforts, however, should be unceasing; and if the child be in-

capable of swallowing, injections of beef-tea should be administered. The posture of the child should be changed occasionally, as, from the extreme languor of the circulation, the blood is apt to gravitate in the part upon which it reclines.

The ammoniated tincture of bark, in the decoction, ten drops of the former to three or four drachms of the latter, three times a-day, will sometimes prove beneficial. The general treatment, however, must be strictly conformable to that which is appropriate in diseases of debility,—which, as is well known, frequently terminate in effusion.

There is an affection of the brain which is usually considered to result from congestion of this organ, and which is repeatedly mistaken for one of a much more serious character. The subject has been most ably treated by the late Dr. Gooch, who expresses his opinion very strongly, that the disease is one which occurs without previous illness of any kind. An attentive perusal, however, of the cases given by him will probably show, that the children had been suffering from the effects of debility, producing impoverishment of the blood; that the nourishment which they had taken was of an improper kind, and unsuited to their tender age; and that the brain was thus either deprived of, or failed to acquire, that amount of nervous energy which is necessary to the due performance of its functions.

The symptoms so graphically described by him, are those which are also found to prevail after an acute affection of the brain, when all excitement of fever has subsided, and the child become exhausted from the severity of the disease. He, however, describes his cases as occurring without any previous disturbance of the health; but there can be no doubt that slight exciting causes of an exhausting and lowering character, long in operation, such as irritation from teething, indigestion, diarrhœa, &c., may have induced the malady; and that it really proceeded from such causes is rendered probable, from the fact that on a nutritious and easily digested aliment being given, together with stimulants, his little patients, in every instance, when blood had not been drawn, recovered their health.

From the extreme interest and value of Dr. Gooch's paper, I should have liked to have given the whole of it, but must content myself by extracting only a portion, comprising two cases,—the one showing the result of bleeding, and the other the beneficial results of the lenient mode of treatment which he proposes.

“ I am anxious to call the attention of medical men to a disorder of children which I find invariably attributed to, and treated as, congestion, or inflammation of the brain, but which I am convinced often depends on, or is connected with, the

opposite state of circulation. It is chiefly indicated by heaviness of head, and drowsiness ; the age of the little patients whom I have seen in this state has been from a few months to two or three years ; they have been rather small of their age, and of delicate health, or they had been exposed to debilitating causes. The physician finds the child lying on its nurse's lap, unable or unwilling to raise its head, half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor. The tongue is slightly white, the skin is not hot, at times the nurse remarks that it is colder than natural ; in some cases there is at times a slight and transient flush : the bowels I have always seen already disturbed by purgatives, so that I can scarcely say what they are when left to themselves : thus the state which I am describing is marked by heaviness of the head and drowsiness, without any signs of pain, great languor, and a total absence of all active febrile symptoms. The cases which I have seen have been invariably attributed to congestion of the brain, and the remedies employed have been leeches and cold lotions to the head, and purgatives, especially calomel. Under this treatment they have gradually become worse ; the languor has increased, the deficiency of heat has become greater and more permanent, the pulse quicker and steadier, and at the



end of a few days, or a week, or sometimes longer, the little patients have died with symptoms, apparently of exhaustion. In two cases, however, I have seen, during the last few hours, symptoms of oppression of the brain, as coma, stertorous breathing, and dilated and motionless pupil."

"I will relate a case as a specimen. A little girl, about two years old, small of her age, and very delicate, was taken ill with the symptoms which I have above described. She lay dozing, languid, with a cool skin, and a pulse rather weak, but not much quicker than natural. She had no disposition to take nourishment. Her sister having died only a week before of an illness which began exactly in the same way, and which was treated by leeches and purgatives; and some doubts having been entertained by the medical attendant of the propriety of the treatment, leeches were withheld, but the child not being better at the end of two days, the parents, naturally anxious about their only surviving child, consulted another practitioner. The case was immediately decided to be one of cerebral congestion, and three leeches were ordered to be applied to the head. As the nurse was going to apply them, and during the absence of the medical attendants, a friend called in who had been educated for physic, but had never practised it, and who had great influence with the family: he saw

the child, said that the doctors were not sufficiently active, and advised the number of the leeches to be doubled. Six, therefore, were applied; they bled copiously; but when the medical attendants assembled in the evening they found the aspect of the case totally altered, and that for the worse; the child was deadly pale; it had scarcely any pulse; its skin was cold; the pupils were dilated and motionless when light was allowed to fall on them, and when a watch was held to its eyes it seemed not to see; there was no squinting. Did this state of vision depend on the pressure of a fluid effused into the brain since the bleeding, and during this exhausted and feeble state of circulation, or did it depend on the circulation of the brain being too languid to support the sensibility of the retina? It is well known that large losses of blood enfeeble vision. I saw a striking instance of this in a lady who flooded to death. When I entered the chamber she had no pulse, and she was tossing about in that restless state which is so fatal a sign in these terrific cases. She could still speak,—asked whether I was come, (she knew I had been sent for,) and said, ‘Am I in any danger? How dark the room is! I can’t see.’ The shutters were open, the blind up, and the light from the window facing the bed fell strong on her face. I had the curiosity to lift the lid and observe the state of the eye; the

pupil was completely dilated, and perfectly motionless, though the light fell strong on it. Who can doubt that here the insensibility of the retina depended on the deficiency of its circulation? But to return to the little patient. The next day she vomited her food several times; it was therefore directed she should take no other nutriment than a dessert-spoonful of asses' milk every hour, and this was strictly obeyed and continued for several days. The child wasted, her features grew sharp, every now and then she looked fretful, and uttered a faint squeaking cry; the eye-balls became sunk in the socket, like those of a corpse that had been dead a month; the skin continued cool, and often cold, and the pulse weak and tremulous, and sometimes scarcely to be felt. Under this regimen, and in this way, she continued to go on for several days. At times she revived a little, so as to induce those who prescribed this treatment to believe confidently she would recover, and she clearly regained her sight, for if a watch were held up to her, she would follow it with her eyes. She lived longer than I expected,—a full week,—and then died, with the symptoms of exhaustion, not with those of oppressed brain. The head was opened by a surgeon accustomed to anatomical examinations, and nothing was found but a little more serum than is usual in the ventricles."

“ If the reader has perused the foregoing case attentively, and has reflected on it, he will of course draw his own inferences. I can draw no others than these, that the heaviness of head and drowsiness, which were attributed to congestion in the brain, really depended on a deficiency of nervous energy; that the bleeding and scanty diet aggravated this state and ensured the death of the child; also, that the state of the eye, which so speedily followed the loss of blood, and which resembled that occasioned by effusion, did in reality depend on a deficiency in the circulation of the brain,—a fact of considerable curiosity and importance.”

“ I will now relate a case similar in the symptoms, but very different in the treatment and result. I was going out of town one afternoon, last summer, when a gentleman drove up to my door in a coach, and entreated me to go and see his child, which he said had something the matter with its head, and that the medical gentleman of the family was in the house, just going to apply leeches. I went with him immediately, and when I entered the nursery, I found a child, ten months old, lying on its nurse's lap, exactly in the state which I have already described; the same unwillingness to hold its head up, the same drowsiness, languor, absence of heat, and of all symptoms of fever. The child was not small of its age, and had not been weak,

but it had been weaned about two months, since which it had never thriven. The leeches had not been put on. I took the medical gentleman into another room, related to him the foregoing case, and several similar to it which had been treated in the same way, and died in the same way. Then I related to him a similar case which I had seen in the neighbouring square, which had been treated with ammonia in decoction of bark, and good diet, which had recovered; and not slowly, so as to make it doubtful whether the treatment was the cause of the recovery, but so speedily, that at my third visit I took my leave. He consented to postpone the leeches, and to pursue the plan which I recommended. We directed the gruel diet to be left off, and no other to be given than asses' milk, of which the child was to take at least a pint and a half, at most a quart in the twenty-four hours. Its medicine was ten minims of the aromatic spirit of ammonia in a small draught, every four hours. When we met the next day, the appearance of the child proved that our measures had been right; the nurse was walking about the nursery with it upright in her arms. It looked happy and laughing; the same plan was continued another day; the next day it was so well I took my leave, merely directing the ammonia to be given at longer intervals, and thus gradually withdrawn, the asses'

milk to be continued, which kept the bowels sufficiently open, without aperient medicine." \*

\* Account of some of the most important Diseases peculiar to Women. By Robert Gooch, M.D., p. 346—351. Edit. 1831.

## CHAPTER XI.

## SCROFULA, AND CACHECTIC DISEASES.

SCROFULA is a disease which rarely affects children before three years of age ; although it is not uncommon to witness, at an earlier period, enlargement of the glands about the throat, from the irritation of teething. These will sometimes proceed rapidly to suppuration ; at others remain hard, without the other usual scrofulous appearances being present.

The appearances denoting a scrofulous habit in children, or a tendency thereto, are the following. A relaxed habit of body, the flesh feeling soft and flabby ; the eyes are large, and the white portion of them is usually a more perfect white than common ; the skin is usually very transparent and clear in fair children, whereas in dark children it is usually swarthy, and at times similar to the appearance presented by persons of a bilious habit.

The lips are generally thicker than usual, the upper one more especially appearing to be swelled.

The skin is always found to be very thin and fine, and more so in dark than fair children. There is commonly a downcast and pensive look of the eyes, especially in dark children. Small blue veins are traceable beneath the skin of the forehead and temples; and one is generally observed between the forehead and bridge of the nose. Children who show a disposition to rickets, marked by a protuberant forehead, enlarged joints, and tumid abdomen, are frequently the victims of scrofula.

Whatever has a tendency to impair the healthy state of the blood, and diminish the proper proportion of the globules in it, may prove an exciting cause of this disease. Of such causes the following may be enumerated as the principal: long-continued indigestion, low and damp situations, imperfect clothing, hereditary debility, whether the parents have been formerly subject to the disease or not; want of fresh air, and exclusion from a sufficiency of solar light; the debility occasioned by severe attacks of measles, scarlet fever, &c.

The means to be employed in the radical cure of scrofula, are those which produce the greatest benefit in states of debility generally. Pure air, and exercise, with warm clothing, (in winter,) are essential. Sea air in summer cannot be too highly extolled for its tonic and bracing effects. Bathing



occasionally in the sea, if no reason exists for its prohibition, will generally be attended with advantage, though *frequent* bathing is often injurious. Indeed, whatever conduces towards establishing a vigorous state of the system, may be considered as influential in mitigating, if not in wholly curing, the disease. The diet should be generous; and animal food should be taken twice a-day: the best stimulant is ale of average strength,—a quarter to half a pint, according to the child's age, should be drunk at dinner every day.

Plenty of sound sleep is of importance; and early hours cannot be too strictly enforced.

A warm bath of salt and water should be used twice a week, when sea bathing is not adopted.

The less interference with scrofulous sores, the better; the applications made to them should be of the blandest description,—chiefly with the intention of excluding the air from them. The most simple and best is the soap cerate plaster, spread upon linen or thin leather. The idea of treating these ulcers by the use of various stimulating remedies ought not to be entertained; when the blood has acquired a healthy state, they will heal gradually of themselves. If they are healed *before* this alteration is effected, other glands will probably become enlarged, and display greater activity in advancing to suppuration, than those which preceded them.

Much care and judgment are necessary in deciding on the proper time for opening a scrofulous abscess. The operation when either performed too early, or too long deferred, is equally prejudicial. If the abscess be opened too soon, suppuration proceeds but slowly, and a considerable cavity remains; if allowed to continue too long, the skin covering the abscess is so attenuated, that when the matter is discharged, it folds over the surface of the sore and produces unseemly scars. The best indication of the proper time for the operation, is a suffused blush remaining permanent for three or four days over the surface of the abscess. The incision should be made in a perpendicular manner, to allow of a free discharge of the contents.

There is no medicine with which I am acquainted that possesses the property of restoring the red colour to the blood so remarkably as sulphuric acid. I shall not enter into any theoretical speculations as to the mode in which this effect is produced, but content myself by stating, that, after a most careful and varied trial of all the best tonics we possess, this has proved superior to them all, more especially in the cases of young infants, to whom the majority of tonic medicines are inapplicable.

In the various chronic affections of the mucose membrane, independent of scrofulous disease, this medicine has a most salutary effect, attention being

paid to the state of the bowels. In scrofula, in its various forms, affecting the eyes, ears, nose, throat, or any cavity lined by mucose membrane, its beneficial influence is, after a steady and persevering trial, strikingly obvious: to no other medicine can the term "infantile tonic" be so correctly applied. Infants of six months old, who appear pale and flabby, in consequence of imperfect nutrition, may take this medicine with safety and advantage.

In all states of extreme pallor, whether proceeding from loss of blood or from a deficiency of the red globules in it, (the former commonly occasioning the latter,) dilute sulphuric acid may be given with advantage. In many instances it will have the effect of a saline, and act as a tonic at the same time.

The medicine next in value in this disease, is the sulphate of iron. In states of great debility I usually combine it with the sulphuric acid, as I have found their combination operate in a most satisfactory manner.

Iodine is a medicine which of late years has been very much extolled for its virtues in controlling, and curing scrofula; but like many other medicines of recent discovery, it has had more virtues ascribed to it than it is justly entitled to. As it exercises a most powerful influence over the glandular structures of the body, whether in a state of disease or otherwise, causing also a rapid absorption of fat, it is necessary to be very guarded in its use, so

that we may avail ourselves of its really valuable properties, without allowing it to produce disturbance in the constitution, or to operate injuriously on those glandular structures which are, at the time of its administration, in a comparatively healthy state.

When iodine, or any of its preparations, has been administered for a length of time, (a fortnight to three weeks,) I have observed that it has sometimes been attended with an enlargement of the tonsils, and relaxation of the soft parts at the back of the throat; and I have always found that the prevalence of this state has been attended with general relaxation throughout the system, muscular debility, and languor in the circulation, the tongue appearing pale and flabby. In such cases quinine, with dilute sulphuric acid, will be found to be most effective in counteracting those relaxing effects. Iodine is ranked among the tonics; but this property of inducing relaxation, when given for any length of time, is a proof that it is only a tonic under certain limitations; and it is necessary to bear in mind this fact when prescribing it is a remedy for a disease originating in debility, like scrofula. I have known the administration of iodine persevered in for months to the injury of children, both in their mental and physical faculties.

Iodine, as an internal medicine for children, ought to be prescribed with the greatest caution. In their

cases, its chief use is when applied outwardly to indurated glands which are free from any redness.

The best preparation for this purpose is the Ung. hydriod. potassæ, reduced to the proper degree of strength with lard, according to the age of the child. It should not be rubbed on the enlarged glands, but around them. Mercury is decidedly prejudicial to scrofulous children, and ought never to be given but as an alterative, and that very seldom.

When the general appearance of the body does not convey the impression that the blood is so deficient in red particles, as is commonly the case in scrofula, and when yet a state of derangement of the various secretions exists, the tongue being foul, and the breath fœtid,—the water high coloured, and depositing a reddish sediment, the bowels uncertain in their action, and the motions deficient in healthy colour,—much benefit may be derived from the administration of the bi-carbonate of soda in combination with decoction of bark, according to the following prescription. R. Decoct. cinch. ʒx.; Tinct. ejusdem. comp. ʒij.; Inf. rhei ʒij.; Sy. aurant. ʒiss.; Sodæ bi-carb. gr. xij.. The half twice a-day, for a child ten years old. When the secretions are improved by the use of this medicine, great benefit will result from giving the acid. s. dil.

When the functions of the liver have long been deranged, and the debility of the child precludes the use of mercury, the extract of dandelion

or taraxicum, in combination with soda, or acid sulph. dil. and some bitter infusion, as gentian, calumba, or quassia, should be given. I have known the integrity of the liver restored by the use of taraxicum, when all other medicines have failed to effect it. It is, as usually prepared, uncertain in its operation. I have never experienced disappointment in that which I have procured from Mr. Hooper, chemist, Pall Mall.

When the various secretions of a scrofulous child are out of order, as evidenced by the foulness of breath, loaded tongue, and inactive liver, immediate benefit may be produced by giving a mild emetic, of ipecacuanha: this will have the effect of removing offensive secretions from the stomach, cause the bowels to act, without any great loss of strength, and increase the efficacy of the medicines necessary to be administered for the cure of the disease. The sores will usually be observed to put on a more healthy appearance, and the enlarged glands to be diminished in size after the operation of an emetic.

The most speedy and effectual plan of treatment for the cure of bronchocele, in adults, with which I am acquainted, is the following, which is also applicable for the cure of scrofula, provided suppuration has not occurred.

The enlarged glands should be sponged for ten minutes, night and morning, with a lotion of salt

and water until the skin becomes corrugated, or wrinkled by its use. The lotion should be prepared in the following manner.

A saucepan, containing a quart of water, should be placed upon the fire, and as much common salt added to the water as it will hold in solution; it should be constantly stirred, and when the fluid appears to be boiling away, it should then be removed from the fire. The lotion is to be used cold.

The medicine necessary to be given until the cure of bronchocele be complete is the following.  
R. Infusi cascarillæ ℥iss.; Tinct. ejusdem ℥j.; Mag. sulph. ℥ss.—℥i.; Acidi sulphur. diluti ℥x. Ft. haustus. To be taken twice a-day.

If the patient should be suffering from debility, infusion of gentian may be substituted for the infusion of cascarilla, and tincture of gentian for tincture of cascarilla, with the addition of sulphate of iron, one grain and a half to two grains twice a-day.

Scrofulous children, and those of a weakly frame, are very liable, during the time of teething, to suffer from enlargement of the various glands, more especially those of the neck. In such children, the teeth are usually very late in showing themselves, a child of fifteen months old not having, perhaps, more than five or six, and these, of course, being in front. Children of this class are generally weak upon their legs; and from their being allowed to

try to walk at too early a period, there is frequently to be observed in them a weakness of one or both ancles, or a distortion of the legs in consequence of the soft bones having yielded to the superincumbent pressure. If children at this period are allowed to eat meat without its being shred very fine, the deficiency of the grinders prevents the child from exerting any masticating power, and the meat is, consequently, bolted. The salivary glands not being called on to part with their secretions to any extent, which the act of chewing occasions, this kind of food is thus deprived of one of the most important solvents necessary for its proper digestion. The liver, in children who are thus improperly fed, is usually observed to be of large size, and the belly is usually more prominent than in children of the same age who are able to run well alone, and are of strong constitution. The head, also, of such children is very apt to be affected from the unequal distribution of blood: indeed there is no part of the body that can be considered free from the injurious effects of improper diet.

It is in children of this kind that diabetes, sometimes occurs. Dr. Venables appears to have been the first to distinctly point out this malady in children. This is his description. "The saccharine diuresis of young children usually commences soon after the period of wean-



ing. From having been up to that time healthy, the child begins to grow dull and inactive, and to daily lose flesh. The skin also becomes harsh and dry, and feels hotter than natural. As the disease proceeds, the bowels become irregular, and the motions assume an unnatural, often greenish, appearance; the abdomen also usually becomes prominent, so as to lead to the suspicion of mesenteric disease. The pulse is quick, and denotes great irritability. In connexion with these symptoms, the quantity of urine begins to gradually increase, at first so slowly as to escape notice; but at length the quantity becomes so great, and the accompanying thirst so urgent, that these circumstances can no longer be overlooked. The urine is sometimes quite limpid; at others of a pale straw or greenish colour; sometimes opalescent or milky. The specific gravity fluctuates considerably even in the same individual; and though it often falls within the diabetic range, the specific gravity seldom reaches the high point of the diabetic urine in adults. From the almost invariable presence of albuminous matter, more or less perfectly developed, and which acts as a ferment, the diabetic urine is apt to undergo rapid changes from saccharine or acetous fermentation, or from both; and soon begins to emit an odour somewhat resembling sour milk." The treatment applicable for the cure

of this state is analogous with the general treatment of scrofula.

There is, indeed, no form of disease which is not aggravated when it occurs in a child who is of a scrofulous habit of body ; and a child of unhealthy constitution, when attacked by any infantile malady, is also less able to contend against it, in consequence of the inroads which previous disease has gradually made in its system.

Valuable as the dilute sulphuric acid is, as a remedy for the cure of scrofula generally, it is not advisable to give it, in every case of this disease. Decided advantage will sometimes be obtained from the use of alkalies ; and of this class of medicines I have found the bi-carbonate of soda to be the most preferable, not only on account of its superior medicinal qualities, but from the little repugnance children usually display in taking it.

The indications by which I have been guided in administering this medicine are the following. The appearance of the tongue,—when it has been red, indicating an unimpoverished state of the blood. The appearance of the upper lip,—when it has been swelled, and cracked in the centre. The state of the eyes,—whether suffering from congestion, or from chronic inflammation of the conjunctiva, of the cornea, or of the lids. The nature of the urine,—if it deposited a red sediment on becoming cold.

The bi-carbonate of soda may be given with

safety, so long as the tongue continues red ; but, when this changes to a pale or flabby state, it is necessary to cease administering it, and to substitute the dilute sulphuric acid.

Bi-carbonate of soda may be given in powders, combined with rhubarb, and calumba root ; or in a liquid form, as in the following prescription :—

R. Sodæ bi-carb. gr. vj, ad x.

Infusi rhæi ʒiij.

Syrup. aurant. ʒj.

Decoct. cinchonæ ʒj. :—Fiat mistura.

The half to be taken twice a-day. This is adapted to a child three years old.

When there is ulceration of the cornea, or when fissures are observed in that membrane, the use, for a time, of sodæ bi-carb. is indicated ; unless the tongue be pale. These ulcerations, or fissures, may be speedily cured by touching them with a very finely pointed piece of lunar caustic. This operation, however, requires a very steady hand.

## CHAPTER XII.

## CONSTIPATION.

A CONSTIPATED state of the bowels is natural to some infants, and if it be too much interfered with, the child's health will suffer.

It is caused by either a natural peculiarity of constitution, or an insufficiency of nutriment in the mother's milk. Children in whom this state prevails generally pass more water than others. The chief inconvenience arising from this peculiarity is the pain the child sometimes experiences in passing the fæces.

The mildest medicines are best adapted to overcome this state of the bowels. A few grains of calcined magnesia in a little warm milk, given the first thing in the morning, or a teaspoonful of castor-oil, is all the medicine that ought to be resorted to, unless symptoms decidedly indicative of inconvenience, arising from the suppressed evacua-

tion, show themselves. In the latter event, an enema of warm gruel, with a little olive oil and common salt, will be preferable to the internal exhibition of any strong medicine. Though the vermicular motion of the bowels may appear to be languid, and those parts themselves seem deficient in the natural moisture common to other children, yet this state may continue without proving, in any degree, injurious to the child's health. So long as the child appears lively and well, it will be better to abstain from the use of medicine.

There are two very simple means which I have had occasion to recommend, and have always found adequate to overcome this obstinate state of the bowels. The one is to accustom the child at a certain hour every day to sit upon its chair, (well supported by pillows,) and allow it to remain there for half an hour. This being persevered in will most likely have the desired effect. The other plan is to let the child suck a piece of boiled fat bacon about two inches long, and as thick as the little finger. Most young children will suck this with avidity, provided it be not too salt. It gives a "fillip" to the stomach and bowels from its richness, and I have never seen any ill effects arise from it. On the contrary, this, in conjunction with the former plan, has always obviated the necessity for medicine under the circumstances alluded to. It operates in the same manner on the infant as a change from a plain to

a rich diet does upon the adult. Its laxative effects, too, may always be depended upon.

To endeavour to subdue, by the use of medicines, the tendency to constipation, I have always found injurious to the child's health, and have, in consequence, preferred the more innocent means.

It frequently happens that the child, after enduring a state of confined bowels for two, three, four, or more days, will strain, and endeavour to relieve itself. This is often attended with much pain. Medicine is not required here. A little spermaceti ointment, taken on the point of the little finger, and carefully passed up the bowels, will soon subdue the rigidity, and allow the child to obey the call of nature. If, however, the prejudices and weakness of the parent revolt (as they sometimes will,) against such simple measures, and require the child to take medicine, more to satisfy their own desires than to benefit the patient, one of the safest and best is the washed sulphur. Two or three grains of this may be administered either in milk or with a little treacle, twice a day. One caution, however, is needful to be observed whilst administering it. If the child is in the habit of being washed in cold water, it will be necessary to substitute tepid for it. Sulphur is a medicine which acts powerfully on the skin, and if the child do not possess a vigorous constitution, it may take cold from this precaution being neglected.

What has already been said relates more particularly to the infant at the breast. In delicate children, constipation is frequently a symptom of debility. The best way to overcome this is to order a generous diet, and to administer tonics in the form of vegetable infusion, as cascarilla, gentian, or calumba, with a few drops of some warm stimulating tincture, such as the ammoniated tincture of bark. If there be much languor in the circulation, the milder preparations of steel will be of great service, according to the following prescription.

℞. Ferri sulphatis gr. ss. ad gr. i.

Acidi sulphurici diluti ℥v. ad x.

Tincturæ cardam. comp. ʒss—ʒj.

Infusi gentianæ comp. ʒj. :—Fiat mistura.

Half to be taken twice a day.

An alterative powder, if the tongue be foul, will be of much service. Hydrarg. cum creta gr. ss ; Sacchari purif. gr. ij.

## CHAPTER XIII.

## PURGING.

I HAVE known many instances in which the lives of children have been placed in great jeopardy from a purging, occasioned by the incautious use of aperient medicine. When severe purging thus occasioned has continued for any length of time, the following symptoms usually show themselves: the child becomes restless, feverish, and picks its nose; the breathing, in some instances, when the lungs are delicate, becomes much quickened, one cheek flushes, and the other remains pale; the child suffers pain at the stomach, and refuses all kinds of food, preferring plain water exclusively.

When the child is in this state, there is one circumstance which is very apt to lead the young practitioner into error, and to induce him to adopt measures which instead of being beneficial to the child, may add to its suffering and danger. I allude



to the state of the tongue, which is always foul, having either a brownish fur of a creamy consistence, extending backwards from the middle part of that organ, or being of dirty white, with the papillæ protruding through the fur like the seeds of a strawberry. This state often tempts the use of purgatives to *cleanse* the tongue, but which aggravate all the symptoms. An irritable state of the bowels will frequently continue long after the subsidence of all fever, and the child will remain weak and emaciated, or preternaturally bloated and pasty. This state is to be remedied by the careful administration of tonics, absorbents, and proper diet.

While restlessness prevails, it will be proper to administer every night at bed-time the following powder, which is for a child of two or three years old :—*R. Pulv. ipecac. c. gr. i. ; Sacchari purificati gr. i. : Fiat pulvis ;* or, two or three drops of laudanum in sweetened water or milk ; and during the day a saline mixture of the bi-carbonate of potash and lemon juice, with syrup of poppies, according to the age of the child, every four or six hours. When restlessness no longer prevails, the fourth part of the following mixture is to be given every six hours.

*R. Potassæ sulphatis gr. x.*

*Infusi rhæi ℥ij.*

*Tinct. ejusdem ℥j.*

*Infusi cascarillæ ℥iss.*

*Syrup. papaveris ℥ij. :—Fiat mistura.*

The child ought not to be *tempted* to eat food, as instinct will prompt it to ask for it when the proper time shall have arrived for allowing a more abundant supply. The appetite, when it does return, is often ravenous; and the child, if unrestrained, will eat so much soft food as to prevent the weakened stomach from digesting it, and thus induce a return of the fever. When the appetite is so inordinate, plain dry biscuits should be given to the child, as the action required for the mastication or sucking of the biscuits, will produce a large discharge of saliva from the salivary glands, which allays the sensation of hunger.

Much injury often arises from parents keeping prescriptions, and applying them to the ordinary ailments of children; the administration not being regulated by the medical acuteness and foresight which are necessary to ensure the safe operation of the medicine.

## CHAPTER XIV.

## OF THE EFFECTS OF CALOMEL ON CHILDREN.

THERE is a prevalent idea, not only amongst the unscientific, but amongst medical men, that children bear the administration of calomel better than adults ; and the reason assigned for this is, that in the bowels of children there is a much greater quantity of mucus, and that the irritative effects are consequently not so much felt. I feel persuaded that this vulgar error frequently induces the worst consequences.

It is true that there is a much greater quantity of mucus in the bowels of children than in those of adults ; but it also appears to be no less true that this abundance of it in the former is expressly supplied by nature, in order to shield those parts, so tender in infant life, and to protect them from the effects of any irritating substance. A dose or two of calomel to a child speedily removes this protection of the bowels in infancy, and if re-

peated doses are administered, there ensues a train of symptoms of so serious a character as sometimes to endanger the child's life. A short description of the state thus induced may not be unacceptable:—The child appears suddenly to lose all its strength; its arms and legs hang helplessly down; it is peevish and fretful; the face assumes a pinched expression; one cheek is generally observed to be flushed, the other remaining quite pale; the eyes are heavy, with a peculiarly sorrowful look. The abdomen feels hot to the hand; and, from the irritative fever produced by the medicine, there is a dryness of the lips, which the child constantly picks; the nose, also, from being deprived of its natural moisture, becomes dry and itches, and this the child also picks. In fact, this state strongly resembles the worm fever: the irritation, though arising from different causes, produces a similar train of symptoms.

When a medical man is called to a child suffering in this way, the parents are not always candid enough to tell the nature of the medicine the child has been taking: and it may so happen that the fact of calomel having been given is deemed of slight importance, (for I have repeatedly met with parents who have thought nothing of giving two, three, or more grains of calomel.) This state, then, is one in the treatment of which the practitioner may be likely to err, especially if he be tinctured with the French theory of medicine, which mostly refers

all appearances of this kind to inflammation of one or other part of the intestinal canal. If the tip of the tongue be red, (which it usually is,) the complaint is at once decided to be inflammatory. The course then adopted generally consists in the application of leeches, either to the pit of the stomach or abdomen; the child expressing a feeling of pain when the bowels are pressed, seems to justify this step. In all probability calomel will be administered; the evacuations will then become of a grassy green, and stringy, or like the water in which spinach has been boiled. If the child be of a vigorous constitution, the irritation will become greater and greater; if, on the contrary, it be feeble, it will lie with its legs stretched out, indifferent to all around it, until death closes the scene. In the former case it is possible that the child may recover; if it should, the convalescence will, in all probability, be tedious, and the state of health long continue delicate. Children who have been over-dosed with calomel have an old look, which arises from the bones appearing prominent, and the face losing its roundness, in consequence of the absorption of the fat.

Used with discretion and in proper cases, calomel is one of our most valuable medicines; but a milder preparation of mercury (such as mercury and chalk) in the majority of cases, answers the same purpose, is more under control, and conse-

quently safer. This preparation, administered in small doses, as an alterative, produces effects so gentle and certain, without disturbing the system, that it is in this respect preferable to calomel.

Mr. Liston, in his *Surgical Lectures*, speaks to this effect. "The body of the lower jaw may be the seat of necrosis; and this is not unfrequently met with, in scrofulous weakly children, from slight causes, such as inflammation produced during the shedding the temporary teeth, and progressive development of the permanent. This irritation, which is slight and of little consequence in healthy children, goes further than necessary in such cachectic subjects, and spreading from the gums to the bone, causes severe inflammation, and ultimately death of the osseous tissue. Sometimes the evil advances to such an extent that the whole body of the bone and parts of its rami are destroyed, and, occasionally, nothing of it remains alive excepting the condyles and coronoid processes, which are rarely necrosed. In these extreme cases, the mischief is irremediable, and the patient is obliged to manage without a lower jaw."—I have known this lamentable and destructive disease occur; and, in the cases which I have witnessed, I have had every reason to believe that it has been mainly occasioned by the frequent and injurious administration of calomel, as an ordinary aperient, to a child of weakly and delicate frame.

Mercury and chalk, or grey powder, valuable as it is in the hands of the medical man, is too indiscriminately given by nurses and parents. Three or four grains is considered by many persons as a very moderate and safe dose for their children to take, and as it does not usually produce much purging, they do not feel any alarm at the administration of it, and are frequently found to express surprise at the children getting out of health, losing flesh and appetite, never dreaming, that a medicine so innocent as they believe it to be, could produce any injurious effects. Its frequent administration operates as a slow poison; and it ought never to be had recourse to unless from special directions given by the medical attendant.

The medicine most likely to be beneficial to a child suffering from the irritating effects of calomel, is a saline mixture composed of bi-carbonate of potash and lemon juice, with Dover's powder in doses suited to the age of the child, and a large proportion of the mucilage of gum acacia.

THE END.

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